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Richard Hughes IV of Avalere Health wishes to disclose he serves as consultant with Avalere Health and regularly engages in paid advisory services rendered to biopharmaceutical companies, including vaccine manufacturers: Pfizer, Merck, and GSK.

Christine Liow of Avalere wishes to disclose she engages in paid advisory services rendered to biopharmaceutical companies, including vaccine manufacturers: Pfizer, Merck, and GSK.

Planning committee discussed conflict of interest with each presenter to ensure there is no bias.

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CDC did not accept commercial support for this continuing education activity.
Understanding the Current Role of Immunization Measures in Quality-Based Policies
Richard Hughes IV, J.D., M.P.H. and Christine Liow, M.P.H.
48th National Immunization Conference

Avalere Health | An Inovalon Company
May 2018
Agenda

1. Quality as an Immunization Driver

2. Snapshot of Immunization Measures
Optimizing uptake of recommended immunizations requires policy interventions across multiple levels.

Traditional policy approaches have not been sufficient in improving immunization rates among adults despite vaccines’ proven economic and population health benefits.

Immunization stakeholders must identify and leverage policy mechanisms in the context of the changing healthcare landscape to drive immunization uptake.
Traditional Policy Approaches Have Been Slow to Improve Adult Immunization Uptake

While successful in raising childhood immunization rates, these approaches have not been similarly successful in adults. Quality measurement has emerged as a potential mechanism that can overcome existing barriers to drive adult immunization uptake.
The Volume-to-Value Shift Is Creating Opportunities to Incentivize Vaccination

Volume → Value

▲ Quality
A key component of defining the value of health products and services

▼ Cost
Reducing costs is well understood, but the role of quality continues to evolve

This shift is driving an increased focus on preventive services, such as vaccines, which have been shown to improve health outcomes and reduce healthcare spending and utilization over the long-term
Quality Measures Can Drive Performance in Many Ways

PROGRAMS THAT USE QUALITY MEASURES AND METRICS INCLUDE:

<table>
<thead>
<tr>
<th>Mandatory Reporting Programs</th>
<th>Pay-for-Reporting Programs</th>
<th>Pay-for-Performance Programs</th>
<th>Value-Based Purchasing Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared Savings Programs</td>
<td>Incentive Arrangements</td>
<td>Alternative Payment Models</td>
<td>Accreditation Requirements</td>
</tr>
</tbody>
</table>
Immunization and Quality Stakeholders Can Use Quality as a Mechanism to Drive Immunization Uptake

**Improving Public Health Through Quality**

Quality measurement, particularly when tied to reporting and payment, serves as a mechanism that can be leveraged to incentivize plans, providers, health systems, and other stakeholders to improve immunization rates.
Optimizing Quality Mechanisms to Drive Immunization Uptake Will Require Stakeholder Action and Support

The Ability to Drive Toward Value-Based Care Is Dependent on Strong Evidence, Robust Data, and Effective Quality Measurement

Snapshot of the Adult Immunization Measure Landscape
Quality Measures Are Foundational to Improving Healthcare Quality

The Quality Measure Landscape is Evolving /
Measure development has rapidly expanded in the increasingly quality-driven and value-based environment. The growing number of quality reporting and payment programs is further driving measure development, refinement, and improvement activities.

7000+ Unique Quality Measures in Existence¹
1000+ Measures in Use Across CMS Programs²*
569 NQF-Endorsed Measures³

CMS: Centers for Medicare & Medicaid Services; NQF: National Quality Forum

*This number includes both currently implemented measures and measures that have been finalized for future implementation via rulemaking. Measures appearing in multiple programs are counted separately each time they appear in a program.
Congress & CMS Have Implemented Various Quality Programs That Accelerate Value-Based Payment

<table>
<thead>
<tr>
<th>Hospital Inpatient and Outpatient Quality Reporting Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medicare Shared Savings Program</td>
</tr>
<tr>
<td>Hospital Readmissions Reduction Program</td>
</tr>
<tr>
<td>Hospital Value-Based Purchasing Program</td>
</tr>
<tr>
<td>Bundled Payments for Care Improvement Initiative</td>
</tr>
<tr>
<td>LTCH, IRF, and Hospice Quality Reporting Programs</td>
</tr>
<tr>
<td>Ambulatory Surgical Center Quality Reporting Program</td>
</tr>
<tr>
<td>Hospital-Acquired Condition Reduction Program</td>
</tr>
<tr>
<td>Comprehensive Care for Joint Replacement</td>
</tr>
<tr>
<td>Oncology Care Model</td>
</tr>
<tr>
<td>SNF and HHA QRPs</td>
</tr>
<tr>
<td>Home Health VBP Demo</td>
</tr>
<tr>
<td>SNF VBP Program</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physician Quality Reporting System (2006)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACA  IMPACT  MACRA</td>
</tr>
</tbody>
</table>

ACA: Affordable Care Act; HHA: Home Health Agency; IMPACT: Improving Medicare Post-Acute Care Transformation; IRF: Inpatient Rehabilitation Facility; LTCH: Long-Term Care Hospital; MACRA: Medicare Access and CHIP Reauthorization Act; MIPS: Merit-Based Incentive Payment System; QRP: Quality Reporting Program; SNF: Skilled Nursing Facility; VBP: Value-Based Purchasing

Note: timeline depicts the initial participation year for voluntary initiatives (e.g., Oncology Care Model) and the first payment adjustment year for mandatory programs (e.g., SNF VBP). Typically, the baseline reporting periods for mandatory programs occur two years prior to the first adjustment year.

Sources: 1. Affordable Care Act.; 2. CMS payment rules.; 3. IMPACT Act.; MIPS and APMs proposed rule.
Adult Immunization Quality Measure Use Remains Inconsistent Across Programs

<table>
<thead>
<tr>
<th>Program or Measure Set</th>
<th>Flu</th>
<th>Pneumo</th>
<th>Zoster</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019 NCQA HEDIS Measure Set*</td>
<td>✓</td>
<td>✓</td>
<td>✓†</td>
</tr>
<tr>
<td>FY 2019 Hospital Inpatient Quality Reporting Program <em>(Medicare)</em></td>
<td></td>
<td></td>
<td>✓†</td>
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<tr>
<td>FY 2019 Hospital Value-Based Purchasing Program <em>(Medicare)</em></td>
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<tr>
<td>FY 2019 Long-Term Care Hospital Quality Reporting Programs <em>(Medicare)</em></td>
<td>✓</td>
<td></td>
<td>✓†</td>
</tr>
<tr>
<td>FY 2019 Hospital-Acquired Condition Reduction Program <em>(Medicare)</em></td>
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<td></td>
<td></td>
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<tr>
<td>FY 2019 Hospital Readmissions Reduction Program <em>(Medicare)</em></td>
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<td></td>
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<tr>
<td>FY 2019 Skilled Nursing Facility Quality Reporting Program <em>(Medicare)</em></td>
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<td></td>
<td></td>
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<tr>
<td>FY 2019 Inpatient Rehabilitation Facility Quality Reporting Program <em>(Medicare)</em></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2019 Star Ratings Program <em>(Medicare Advantage)</em></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>FY 2018 Hospital Outpatient Quality Reporting Program <em>(Medicare)</em></td>
<td></td>
<td></td>
<td>✓†</td>
</tr>
<tr>
<td>FY 2018 Ambulatory Surgical Center Quality Reporting Program <em>(Medicare)</em></td>
<td></td>
<td></td>
<td>✓†</td>
</tr>
<tr>
<td>FY 2018 End-Stage Renal Disease Quality Incentive Program <em>(Medicare)</em></td>
<td></td>
<td></td>
<td>✓†</td>
</tr>
<tr>
<td>FY 2018 Home Health Value-Based Purchasing Program <em>(Medicare)</em></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>FY 2018 Home Health Quality Reporting Program <em>(Medicare)</em></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2018 Quality Payment Program – MIPS Measure Set <em>(Medicare)</em></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FY 2018 Medicare Shared Savings Program / QPP AAPM <em>(Medicare)</em></td>
<td>✓</td>
<td>✓</td>
<td></td>
</tr>
<tr>
<td>2017 Adult Core Measure Sets <em>(Medicaid)</em></td>
<td>✓</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Proposed
† Only influenza measure for healthcare personnel; no measure for patients
‡ Proposed through an adult immunization composite measure
Under CMS’ Quality Payment Program, Clinicians Have Two Options for Moving to Value-Based Payments

QPP outlines two tracks for physicians

Merit-Based Incentive System (MIPS)

CMS estimates approximately **622,000** eligible clinicians will be required to participate in MIPS in 2018

Advanced Alternative Payment Models (AAPMs)

CMS estimates approximately **185,000 to 250,000** clinicians will become Qualified Physicians in 2018 through participation in AAPMs

Note: While reporting takes place in 2018, payment adjustments are applied in 2020
QPP: Quality Payment Program; EHR: Electronic health record; PQRS: Physician Quality Reporting System; VM: Value-based payment modifier
Medicare CY 2018 Updates to QPP: [link](#)
Providers Participating in MIPS and AAPMs Can Report on Immunization Measures

<table>
<thead>
<tr>
<th>Quality Reporting Under MIPS</th>
<th>Quality Reporting Under AAPMs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Providers must report on 6 measures from the MIPS measure set; MIPS-supported immunization measures include*:</td>
<td>Some providers may report on measures through QCDRs; 2 feature immunization measures not supported by MIPS:</td>
</tr>
<tr>
<td>QCDR: Qualified Clinical Data Registries; QP: Qualified physician</td>
<td></td>
</tr>
</tbody>
</table>

**Providers may also choose to report on specialty measure sets, which are comprised of subsets of MIPS measures that are most relevant to certain clinical specialties**

<table>
<thead>
<tr>
<th>Childhood Immunization Status</th>
<th>Preventive Care and Screening: Influenza Immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Immunization for Adolescents</td>
<td>Pneumonia Vaccination Status for Older Adults</td>
</tr>
<tr>
<td>Pneumococcal Vaccination Status for Older Adults</td>
<td>Preventive Care and Screening: Influenza Immunization</td>
</tr>
<tr>
<td>Preventive Care and Screening: Influenza Immunization</td>
<td>Pneumonia Vaccination Status for Older Adults</td>
</tr>
</tbody>
</table>

QCDR: PPRNet
Zoster vaccination in elderly populations

QCDR: ACP Genesis
Zoster, Tdap, and pneumococcal in high-risk populations
Stakeholder Efforts Will Continue to Transform the Adult Immunization Quality Landscape

**Challenge:** How can immunization and quality stakeholders engage?

### Developing Effective Quality Measures
- Fill immunization measure gaps
- Refine and improve existing immunization measures

### Incorporating Quality Measures into Programs
- Monitor changes to new and existing programs and payment models
- Advocate for inclusion of immunization measures in programs where needed

### Tying Quality Measurement to Payment
- Educate immunization stakeholders on the impact of new value-based payment structures
- Leverage existing payment mechanisms for immunizations, where applicable
The presenters would like to thank colleagues Emily Sobel, Reed Maxim, and Haile Dagne for their contributions to this presentation.
Experience with Developing an Adult Immunization Composite Measure

CAPT Thomas Weiser, MD, MPH
Medical Epidemiologist,
Portland Area Indian Health Service

National Immunization Conference
Atlanta, May 14—18, 2018
Overview

- Defining the Measure
- Challenges and Successes
- Current Status

Disclaimer

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Department of Health and Human Services, the Indian Health Service or the Centers for Disease Control and Prevention.

Disclosure

CAPT Weiser has no conflicts of interest to disclose
Defining the Adult Immunization Composite Measure
Beyond Influenza and Pneumococcal Vaccines

- The adult immunization schedule has grown more complex with the recent introduction of several new vaccines.
- 2012 National Adult Influenza and Immunization Summit, NVPO and NQF all aligned with recommendations to develop and test adult immunization composite measure.
- We focused on developing a measure that included all ACIP-recommended adult vaccines for healthy adults based on age.
# Vaccines Included in Adult Immunization Composite Measure

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Vaccines Included</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–59</td>
<td>Tdap ever; Tdap _or_ Td within 10 years (Tdap/Td)</td>
<td>Influenza</td>
</tr>
<tr>
<td>60–64</td>
<td>Tdap/Td; Zoster</td>
<td>Influenza</td>
</tr>
<tr>
<td>≥ 65</td>
<td>Tdap/Td; Zoster; Pneumococcal polysaccharide-23 (PPSV-23) _or_ pneumococcal conjugate (PCV-13)</td>
<td>Influenza</td>
</tr>
</tbody>
</table>

**Guiding Principals:**
1. Focus on routine, age-based vaccine recommendations
2. Keep it simple
Indian Health Service

Service Population: 2.2 Million
Electronic Health Records In IHS, Tribal and Urban Indian Health System

- Resource and Patient Management System (RPMS)
  - Electronic Health Record (EHR) communicates with RPMS
  - No interconnectivity between sites
  - Advanced Population Health Management tools

- Non-RPMS (Commercial Off The Shelf)
  - NextGen, Epic, Cerner, Centricity, etc.
Applicability of Composite Measures

- IHS
  - Government Performance and Results Act (GPRA)
- HRSA/FQHC
  - Uniform Data System (UDS)
- CMS
  - Meaningful Use
  - Medicare Access and CHIP Reauthorization Act (MACRA)
- Private Insurance/Other
  - Healthcare Effectiveness Data and Information Set (HEDIS)
Challenges and Successes with Implementing the Adult Immunization Composite Measure
Contextual Analysis

- **Site Visits**
  - Structured interviews with providers, administrators and study coordinators

- **Processes**
  - Documentation of immunizations given in clinic
  - Obtaining data when given by outside providers
  - Billing, insurance coverage and patient assistance
  - Vaccine storage
  - Staff roles
Successes

Commonly identified successful staff activities included:

- All providers and staff support immunizations
- Providers want team-specific reports of immunization coverage
- Composite measure reporting improves accountability

“Our provider will help with patient education for hesitant patients or people with a lot of questions. She is very supportive of the nurse’s recommendations about which vaccines are due.”
Successes

Successful patient education and engagement included:

- Talking with patients as an effective way to overcome resistance
- Understanding that patients generally support and desire immunizations
- Patients request vaccines

[The AICM] "helps the adult population to realize that they’re important“... "awareness increased and the nursing staff was more apt to try to ... encourage those vaccines."
Commonly identified challenges included:

- Storage, handling and cost of herpes zoster vaccine (Zostavax®)
- Patient education
- Overcoming vaccine hesitancy

"[For] everything that we produce there are maybe 30 things that they get on their way out that is saying the opposite".
Recommendations

- Develop uniform processes around immunization
- Provide visual displays such as graphs of immunization trends
- Make sure to set up EHR reminders before using the AICM
- Provide training presentation for nurses on Adult Immunizations
Current Status of the Adult Immunization Composite Measure in Indian Health Service
Percent Coverage for AICM by Age Group and Overall, IHS GPRA Results, 2017

Data from 165 Health Programs

- 19–59 (n=389044)
- 60–64 (n=33513)
- ≥65 (n=64170)
- All (n=167149)

With Flu

Without Flu
Percent Coverage for AICM by Age Group and Overall, IHS Area “A” GPRA Results, 2017

Data from 6 facilities

19–59 (n=11686) 60–64 (n=1243) ≥65 (n=2405) All (n=15516)

With Flu Without Flu
Percent Coverage for AICM by Age Group and Overall, IHS Clinic “A” GPRA Results, 2017

Data from 1 Federal facility

<table>
<thead>
<tr>
<th>Age Group</th>
<th>With Flu</th>
<th>Without Flu</th>
</tr>
</thead>
<tbody>
<tr>
<td>19–59 (n=2219)</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>60–64 (n=220)</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>≥65 (n=408)</td>
<td>20%</td>
<td>30%</td>
</tr>
<tr>
<td>All (n=2847)</td>
<td>20%</td>
<td>30%</td>
</tr>
</tbody>
</table>
Conclusions

- We developed and implemented an Adult Immunization Composite Measure capable of assessing the overall function of adult immunization services at all levels of IHS.
- We identified factors related to successes and challenges in implementing this measure.
- The measure is flexible and can be modified as adult immunization recommendations change.
  - We are already developing new recommendations for herpes zoster vaccine.
Acknowledgements

- Amy Groom
- Angela Shen
- Abby Bacon
- Bernadette Corum
- Holly Van Lew

- Sharilyn Kidder
- Kelle Little
- Nancy Bennett
- Monika Damron
- Victoria Warren-Mears

- Funding: National Vaccine Program Office through Indian Health Service
- Publication: Evaluation of an Adult Immunization Composite Measure in the Indian Health Service in Vaccine 2018 (in press)
Testing & Development of Electronic Adult & Prenatal Immunization Measures for HEDIS®

Lindsey Roth, MPP
Senior Research Associate, Performance Measurement
National Committee for Quality Assurance (NCQA)

National Immunization Conference
May 16, 2018
PURPOSE OF HEALTH PLAN QUALITY MEASURES

DESIRABLE ATTRIBUTES OF MEASURES

NEW IMMUNIZATION MEASURES PROPOSED FOR HEDIS®
Health care’s most-used tool for improving performance

Asks how often insurers provide evidence-based care to support more than 70 aspects of health

About NCQA
It all starts with HEDIS®
Example of Measure Improvement

*Beta-blocker treatment after a heart attack: 1996*

Each of these dots is a health plan.

Note the variability from plan to plan.

National average: 62.6%
Example of Measure Improvement

*Beta blocker treatment after a heart attack: 2006*

National average: 97.7%

Note improvement in performance & consistency among plans.
Desirable Attributes for Measures

To be meaningful, measures must balance several criteria

- **Relevant**
  - Importance to stakeholders, evidence-based

- **Scientifically Sound**
  - Validity and reliability

- **Feasible**
  - Understandable, No unreasonable burden
Guidelines recommend the following vaccines

*Adults* – routine influenza; Td/Tdap; zoster; pneumococcal

*Pregnant Women* - influenza and Tdap

**Gaps in care** for both adults and pregnant women

**Opportunity for measures** to assess health plan performance on administration of these vaccines
New Immunization Measures for HEDIS

Proposed for 2018 health plan reporting

Adult Immunization Status
Percentage of members 19 years and older who are up-to-date on recommended routine vaccines for influenza, Td and Tdap, zoster, and pneumococcal.

Prenatal Immunization Status
Percentage of deliveries on or after 37 gestational weeks in which women had received influenza and Tdap vaccines.
Electronic Clinical Data Systems

Growing interest in electronic reporting
- Various state requirements
- Centers for Medicare & Medicaid Services

What are electronic clinical data systems?

<table>
<thead>
<tr>
<th>Electronic health record (EHR)</th>
<th>Health information exchange / clinical, immunization registry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case management registry</td>
<td>Administrative claims</td>
</tr>
</tbody>
</table>
## Field Test of Measures

<table>
<thead>
<tr>
<th></th>
<th>Adult Immunization</th>
<th>Prenatal Immunization</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participating plans</strong></td>
<td>3 plans each with commercial, Medicaid &amp; Medicare lines</td>
<td>3 commercial &amp; 2 Medicaid plans</td>
</tr>
<tr>
<td><strong>Range of plan size</strong></td>
<td>23,000 to 3.3 million members</td>
<td>194,000 to 2 million members</td>
</tr>
<tr>
<td><strong>Data sources used to</strong></td>
<td>• Claims data only</td>
<td>• Claims data only (2 plans)</td>
</tr>
<tr>
<td><strong>identify immunizations</strong></td>
<td>• Claims &amp; state IIS data</td>
<td>• Claims &amp; state IIS data (2 plans)</td>
</tr>
<tr>
<td></td>
<td>• Claims, state IIS &amp; EHR data</td>
<td>• Claims &amp; case management data</td>
</tr>
</tbody>
</table>
Adult Immunization Status

2016 performance rates across commercial & Medicaid health plans for adults ages 19-64

### Commercial Plans

- **Received flu vaccine 7/1/15-6/30/16, adults 19-64:** 15% 18% 33%
- **Received Td or Tdap within last 10 years, adults 19-64:** 6% 23% 82%
- **Received zoster vaccine, adults 60-64:** 4% 19% 70%
- **Composite: adults who received all vaccines:** 1% 6% 31%

### Medicaid Plans

- **Received flu vaccine 7/1/15-6/30/16, adults 19-64:** 3% 10% 28%
- **Received Td or Tdap within last 10 years, adults 19-64:** 1% 24% 74%
- **Received zoster vaccine, adults 60-64:** 0% 11% 57%
- **Composite: adults who received all vaccines:** 0% 6% 26%
### Adult Immunization Status

*2016 performance rates across Medicare health plans for adults ages 65 and older*

<table>
<thead>
<tr>
<th>Vaccination</th>
<th>Percent of Members</th>
</tr>
</thead>
<tbody>
<tr>
<td>Received flu vaccine 7/1/15-6/30/16</td>
<td>7%</td>
</tr>
<tr>
<td>Received Td or Tdap within last 10 years</td>
<td>3%</td>
</tr>
<tr>
<td>Received zoster vaccine</td>
<td>0%</td>
</tr>
<tr>
<td>Received pneumococcal vaccine series</td>
<td>1%</td>
</tr>
<tr>
<td>Composite: adults who received all vaccines</td>
<td>0% 0.2%</td>
</tr>
</tbody>
</table>

*Medicare Plans*
Prenatal Immunization Status

2015 performance rates across commercial & Medicaid health plans

Commercial Plans

- Received Tdap vaccine within 40 weeks prior to delivery: 37%, 60%, 82%
- Received flu vaccine within 12 months prior to delivery: 28%, 34%, 62%
- Received both vaccines: 13%, 27%, 57%

Medicaid Plans

- Received Tdap vaccine within 40 weeks prior to delivery: 28%, 79%
- Received flu vaccine within 12 months prior to delivery: 24%, 54%
- Received both vaccines: 13%, 48%
Measure Development

Conclusions

- Quality measures can be effective tools to compare & monitor health plan performance
- Need to balance desirable attributes of importance, scientific acceptability & feasibility
- Leveraging health information technology is key