Adult Composite Measure Project IHS and VA

Amy Groom, MPH
IHS Immunization Program Manager/CDC Public Health Advisor

Jane Kim, MD, MPH
Deputy Chief Consultant for Preventive Medicine
VHA National Center for Health Promotion and Disease Prevention

U.S. Department of Veterans Affairs
Veterans Health Administration
Patient Care Services
Health Promotion and Disease Prevention

Beyond influenza and pneumococcal

- The adult immunization landscape has changed significantly with the introduction of several new vaccines targeting adults
- Participants at the 2012 National Adult Influenza and Immunization Summit recommended a study to assess the feasibility of implementing adult immunization composite measures to include all recommended adult vaccines

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Why a Composite Measure?

- Provides a broad perspective on the system of vaccination at a facility
  - Rather than a campaign to increase coverage with one vaccine, encourages a systematic approach for all vaccines
- Multiple measures make it challenging to implement broad-based immunization quality improvement activities
- "Composite measures can enhance measurement to extend beyond tracking performance on separate measures and can provide a potentially deeper view of the reliability of the care system" – *Institute of Medicine, Performance Measurement: Accelerating Improvement, Washington, DC: National Academies Press; 2006*

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Objectives

- Assess the technical feasibility of developing an adult immunization composite measure using electronic health record data
- Define, test, and validate composite immunization measures
- Provide recommendations on the feasibility and utility of an immunization composite measure for quality improvement initiatives

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IHS

- The Indian Health Service is the federal healthcare provider for eligible American Indian/Alaska Native patients
  - 44 Hospitals, 296 outpatient health centers, and 272 Alaska village clinics and health stations in 35 states
  - Service population – 1.8 million
- Serves all ages
- Computerized medical record data

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VA

- The Veterans Health Administration (VHA) is the healthcare arm of the Department of Veterans Affairs
  - 151 hospitals and 825 Community Based Outpatient Clinics (CBOCs) in FY 2012
  - 6.333 million unique patients served by VHA in FY 2012
- Serves eligible Veterans in all 50 states plus Puerto Rico, Guam, and the Philippines
- Computerized medical record data

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Methods

- Data Source: Electronic health record data from the IHS and VA
- Population:
  - Patients 19 years or older as of July 1st 2012 with at least one visit to an IHS/VA healthcare facility between July 1st, 2012 and June 30th, 2013.
  - Limited to IHS/VA facilities in the states of WA, OR and ID
- Vaccines:
  - Limited to those routinely recommended for adults (not catch up vaccines or vaccines based on risk)
  - Composite measure based on receipt of ALL recommended vaccines
- IHS and VA conducted separate analyses on their respective data

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Adult Immunization Measures

Age Groups	Recommended vaccines	Composite Measure Vaccines
19–59 years	Td in last 10 years, Tdap, and Influenza	Tdap and Influenza*
60–64 years	Td in last 10 years, Tdap, Influenza, and Zoster	Tdap, Influenza*, and Zoster
65 years and older	Td in last 10 years, Tdap, Influenza, Zoster, and Pneumococcal Polysaccharide Vaccine, 23-Valent (PPSV23)	Tdap, Influenza*, Zoster, and Pneumococcal polysacchride 23 valent (PPSV23)
All Ages	All age-appropriate vaccines	Vaccination with all age-appropriate vaccines

* Influenza vaccine for the 2012/2013 influenza season

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Vaccine Codes – CVX and CPT

Vaccine	CVX Code	CPT Code
Tdap	115	90715
Zoster	121 – Zoster vaccine, live	90736
Pneumococcal Polysacchride, 23-Valent (PPSV23)	33 – PPSV23 – 33 109 – Pneumococcal , not otherwise specified 100– Pneumococcal Conjugate Vaccine (7 valent) 133 – Pneumococcal Conjugate Vaccine (13 valent) 152 – Pneumococcal Conjugate Vaccine, unspecified	90669, 90670, 90732, G0009, G8115 90732
Influenza	88 – influenza unspecified formulation 144 – influenza intradermal 135 – influenza high dose 111– trivalent live attenuated influenza vaccine 151 – Influenza nasal, unspecified formulation 141 –Trivalent inactivated influenza vaccine 15 – Inactivated influenza vaccine (historical) 140 – Trivalent Inactivated influenza vaccine, preservative free 16 – influenza whole virus vaccine	90654—90662, 90724, G0008, G8108

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VA Methods and Results

Jane Kim, MD, MPH
Deputy Chief Consultant for Preventive Medicine
VHA National Center for Health Promotion and Disease Prevention

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VA Methods

- All patients – any patient with any electronic or face to face visit in the study period
- Primary care patients – patients who had an electronic or face to face visit to one of the VA-designated "Patient Aligned Care Teams (PACT)" in its Patient Care Management Module (PCMM)
- Used three separate databases to identify immunization data

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VA Summary

- Different outcomes depending on which database used
- Immunization coding not standardized across VA
- Immunizations can be charted within the text of the electronic note and not captured in data extract (especially immunizations received outside VA)
- Ability to do data verification with chart reviews not available for this project

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Next Steps – VA

- Continue transition to CVX codes
- Continue immunization projects to standardize documentation across VA system
- Continue immunization projects to share data with other immunization registries
- Chart reviews for validation of data results for the Adult Immunization Composite project

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IHS Methods and Results

Amy Groom, MPH
IHS Immunization Program Manager/CDC Public Health Advisor
IHS Division of Epidemiology and Disease prevention

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IHS Methods

- All patients – any patient with any visit in the study period
- Primary care patients – patients who had a visit to one of the IHS designated "primary care clinics"
  - Excludes ER, Eye, Dental, Audiology, Mental Health, Pharmacy, etc.

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IHS Results

Age Group	Patient Status	Total Patients # (%)
19–59 years	Primary care	38,939 (73%)
	Non-Primary	14,137 (27%)
	Total	53,076
60–64 years	Primary care	3,239 (78%)
	Non-Primary	893 (22%)
	Total	4,132
65+ years	Primary care	5,389 (77%)
	Non-Primary	1,642 (23%)
	Total	7,031
All Ages	Primary care	47,567 (74%)
	Non-Primary	16,672 (26%)
	Total	64,239

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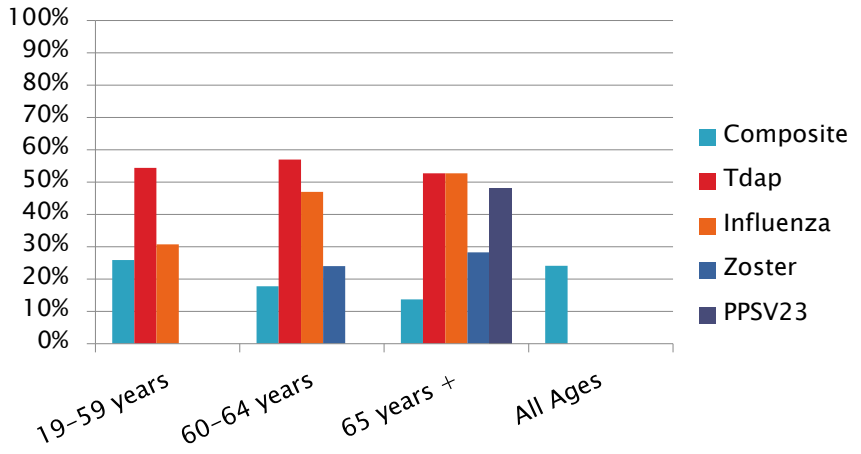
IHS Results – All Patients



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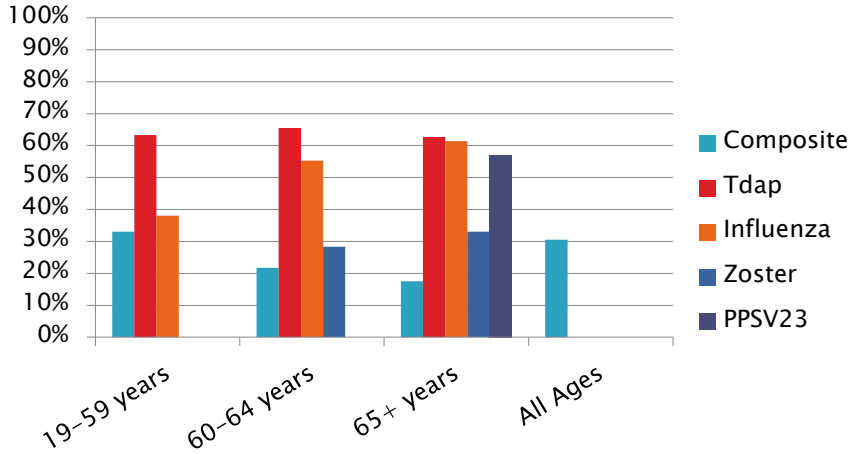
IHS Results – Primary care patients



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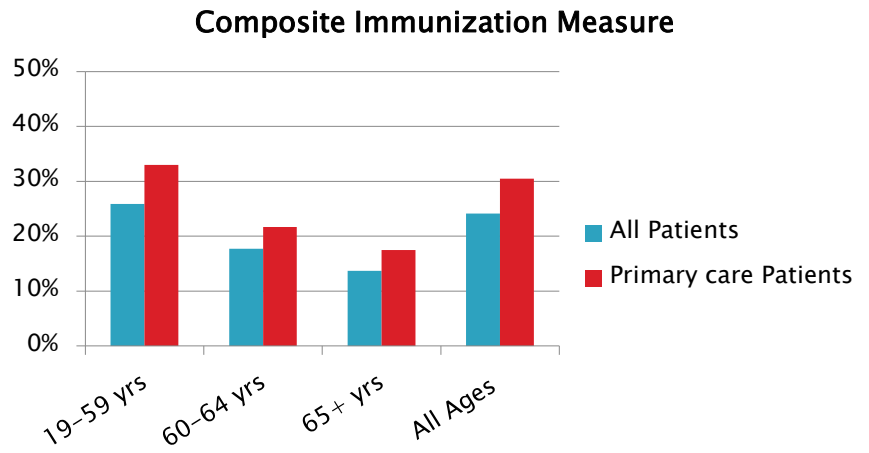
IHS Results
All Patients vs. Primary care Patients



Coverage among Primary Care patients was significantly higher in all age groups

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IHS Summary

- Relatively high coverage with Tdap, Zoster and PPSV23 vaccines compared to the general U.S. population
  - Use of provider reminders in EHR
- Coverage with influenza, however, remains lower than coverage reported for the general U.S. population
  - Differences in methodology – self report vs. administered
  - Missing data – influenza vaccine available at other venues
- High coverage with individual vaccines does not necessarily translate to high coverage with composite measure
  - Composite measure coverage for all ages 24%
- Higher vaccine coverage among primary care patients than non-primary care patients

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Next Steps – IHS

- Assess usefulness of composite measure as a performance measure
  - Pilot to implement, evaluate usefulness at small sample of sites
  - Inclusion of developmental adult composite measure into IHS performance measures software
    - Data from all IHS sites
- Comparison with other preventive measures
  - HIV screening, depression screening, cervical cancer screening, colorectal cancer screening
- Explore other ways to 'score' the composite measure
- Continue efforts to incorporate adult immunization data into data exchanges with state immunization registries

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Challenges and Issues

- Documentation of vaccines in the EHR
  - Free text vs. standardized code set (e.g. CVX)
- Missing data
  - Vaccines received outside the system not necessarily captured in the EHR
    - Influenza
- Defining the denominator
  - All patients? Primary care patients?
- Scoring of the composite measure
  - All or nothing? Partial credit? Weighting of vaccines?
- Composite measure does not replace need for data on individual vaccine coverage

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