
Kinley Reed
Candidate for Master of Public Health
September 12, 2017
Outline

• Brief Introduction of Field Experience
• Minor Project: SNiPP Data Entry
• Major Project: High Risk Conditions and Vaccination Gaps in IPD
• Core Competencies
• Questions
Field Experience: Emerging Infections Program
Emerging Infections Program

• Established in 1995 by the CDC
• Response to the growing population, an increase in poverty, and the heightened international travels
• Network of state health departments, public health and clinical laboratories, academic establishments, state and federal agencies, and healthcare providers
Emerging Infections Program

Goal 1:
- **Surveillance and Response**
  - Detect, investigate, and monitor emerging pathogens, the diseases they cause, and the factors influencing their emergence.

Goal 2:
- **Applied Research**
  - Integrate laboratory science and epidemiology to optimize public health practice.

Goal 3:
- **Infrastructure and Training**
  - Strengthen public health infrastructures to support surveillance and research and to implement prevention and control programs.

Goal 4:
- **Prevention and Control**
  - Ensure prompt implementation of prevention strategies and enhance communication of public health information about emerging diseases.
Emerging Infections Program
TN Emerging Infections Program

- Active Bacterial Core Surveillance (ABCs)
- FoodNet
- Healthcare-Associated Infections (HAI)
- Flu-Surv Net
- HPV-IMPACT
- TickNet
Active Bacterial Core Surveillance (ABCs)

• Focuses on the epidemiology and surveillance of invasive bacterial diseases
• Group A *Streptococcus* (GAS), Group B *Streptococcus* (GBS), *Haemophilus influenza*, *Neisseria meningitides*, *Streptococcus pneumoniae*, and Methicillin-Resistant *Staphylococcus aureus* (MRSA)
Learning Objectives

• Learn to navigate database software used for population-based surveillance and research
• Gain experience extracting pertinent medical information from patient records and CRFs
• Expand knowledge of statistical analyses and additional epidemiological techniques
Measurable Outcomes

• Shadowed personnel in population-based surveillance, epidemiology, and disease-prevention careers
• Assisted in data entry for SNiPP project
• Aided in data cleaning and audit for Pneumococcal Carriage Study
• Attended weekly surveillance meetings and discussions at TDH
Measureable Outcomes

• Assisted in the transfer of data to new software databases (REDCap)
• Participated in monthly EIP meetings to discuss various public health issues
• Designed and implemented an observational study to evaluate high risk conditions in populations with IPD, and to determine vaccination gaps within those identified populations
Outline

• Brief Introduction of Field Experience
• **Minor Project: SNiPP Data Entry**
• Major Project: High Risk Conditions and Vaccination Gaps in IPD
• Core Competencies
• Questions
Minor Project: SNiPP

SNiPP: Surveillance for Non-invasive Pneumococcal pneumonia

• Most common form of pneumococcal disease in adults
• Over 900,000 diagnosed each year in U.S.
• Account for 36% of community-acquired pneumonia
Tennessee Emerging Infections Program

Surveillance for Non-invasive Pneumococcal Pneumonia

[Map showing Tennessee counties with highlighted areas for surveillance.]
Urine Antigen Test (UAT)

Appendix V: ABCs form for collecting urine specimens

For site use only—not transmitted to CDC
Name: ____________________________
Address: ____________________________
Gender: ____________________________
Date of Birth: _______________________

STATE: ____________________________ STATEID: ____________________________
COUNTY: ____________________________ SNIPP STATEID: ____________________________
HOSPITAL ID WHERE UAT WAS ordered: ____________________________
HOSPITAL ID WHERE PATIENT TREATED: ____________________________

DATE UAT SPECIMEN COLLECTED: __/__/____

How is the urine being sent to public health laboratory/CDC?
☐ Sterile container (preferred)
☐ Container with boric acid or other (specify ______________) compound

WAS A STERILE SITE CULTURE OBTAINED FROM THIS PATIENT?
☐ yes
☐ no
☐ don’t know

IF YES, PLEASE INDICATE SPECIMEN SOURCE(S)(indicate all that apply): __________
1= blood
2= csf
3= pleural fluid
12= bone
13= other, specify: __________

IF YES, Please include ABCs StateID (for sterile site positive culture)

WHAT WERE THE RESULTS OF THE CULTURE(S):
☐ no culture was obtained
☐ positive for S. pneumoniae, please specify source(s) __________
☐ negative for S. pneumoniae… specimen was positive for __________
☐ don’t know

KANSAS STATE UNIVERSITY
Objectives

• To properly transfer patient medical information from hard copy of the case report form (CRF) to the electronic form entry

• Results from data entry are used to provide population-based estimates that are easily transmitted to the CDC for future studies
Methods

1. Healthcare facilities report all possible UAT cases to EIP
2. Surveillance Officer gets results from hospitals/labs
3. All UAT (+/- cases) cases are processed through REDCap
REDCap

Software solution to develop and manage online surveys and databases

• Established by Vanderbilt
• Over 2,000 institutional partners use REDCap
• TN EIP transfers all data to REDCap
Methods: Data Entry

An Example Sleep Study (demo)

Record number: 10

Participant Information
- Participant Name: must provide value
- E-mail address
- Date subject signed consent form: YYYY-MM-DD
- Pease upload the signed consent form
- Any Notes or Comments?

Sleep Study Information
- e.g. mobility issues, schedule requests, special considerations

Applications
- Data Exports, Reports, and Stats
- Logging
- User Rights
- Data Quality

Data Collection
- Record Status Dashboard
- Add / Edit Records
- Participant Information

Labs
- Observed Behavior
- Sleep Index

Record number 10
- Select other record

Enter the full name, please!
Results

• Submitted over 1,000 negative UAT cases into REDCap

• Approximately over 7,400 negative UAT cases in the REDCap Patient Tracker
Discussion

• Pneumococcal pneumonia is very common
• Important to enter both positive and negative UAT cases to ensure proper population-based estimates
• EIP analyzes the proportions of pneumonia hospitalizations in hospitals that perform the UATs and those that do not
Outline

• Brief Introduction of Field Experience
• Minor Project: SNiPP Data Entry

**Major Project: High Risk Conditions and Vaccination Gaps in IPD**

• Core Competencies
• Questions
History: *Streptococcus pneumoniae*

- Gram + bacteria, also known as pneumococcus
- First isolated by Pasteur in 1881 by a rabies + patient
- As of 2011, over 92 serotypes identified
Background: *Streptococcus pneumoniae*

- Normal inhabitants of the respiratory track
- Certain serotypes cause serious illness (6A, 14, 19F, and 23F)
- Cause invasive illnesses and/or noninvasive illnesses

- Major clinical illnesses:
  - ✓ Pneumonia
  - ✓ Sinusitis
  - ✓ Otis media
  - ✓ Bacteremia
  - ✓ Meningitis
Invasive Pneumococcal Disease (IPD)

- **Morbidity**
  - 62% of invasive disease worldwide

- **Mortality**
  - Over 12,000 bacteremia cases/year in U.S.
  - 50% of meningitis cases in U.S.
  - 22,000 deaths/year in U.S.
“Pneumococcal disease kills more people in the United States each year than all other vaccine-preventable diseases combined.”

-CDC, 2014
IPD Risk Factors

- Race
- Age
- Immunosuppressant illnesses

The CDC lists the following as most prevalent underlying conditions:

- HIV
- Diabetes
- Liver/Heart Disease
- Smoking
- Asthma
27. UNDERLYING CAUSES OR PRIOR ILLNESSES: (Check all that apply OR if NONE or CHART UNAVAILABLE, check appropriate box) 1 None 1 Unknown

| 1 | AIDS or CD4 count <200 |
| 1 | Alcohol Abuse, Current |
| 1 | Alcohol Abuse, Past |
| 1 | Asthma |
| 1 | Atherosclerotic Cardiovascular Disease (ASCVD)/CAD |
| 1 | Bone Marrow Transplant (BMT) |
| 1 | Cerebral Vascular Accident (CVA)/Stroke/TIA |
| 1 | Chronic Kidney Disease |
| 1 | Chronic Liver Disease/cirrhosis |
| 1 | Current Chronic Dialysis |
| 1 | Chronic Skin Breakdown |
| 1 | Cochlear Implant |

| 1 | Complement Deficiency |
| 1 | Connective Tissue Disease (Lupus, etc.) |
| 1 | CSF Leak |
| 1 | Deaf/Profound Hearing Loss |
| 1 | Dementia |
| 1 | Diabetes Mellitus |
| 1 | Emphysema/COPD |
| 1 | Heart Failure/CHF |
| 1 | HIV Infection |
| 1 | Hodgkin’s Disease/Lymphoma |
| 1 | Immunoglobulin Deficiency |
| 1 | Immunosuppressive Therapy (Steroids, Chemotherapy, Radiation) |
| 1 | IVDU, Current |
| 1 | IVDU, Past |
| 1 | Leukemia |
| 1 | Multiple Myeloma |
| 1 | Multiple Sclerosis |
| 1 | Myocardial Infarction |
| 1 | Nephrotic Syndrome |
| 1 | Neuromuscular Disorder |
| 1 | Obesity |
| 1 | Other Drug Use, Current |
| 1 | Other Drug Use, Past |
| 1 | Parkinson’s Disease |

| 1 | Peptic Ulcer Disease |
| 1 | Peripheral Neuropathy |
| 1 | Peripheral Vascular Disease |
| 1 | Plegias/Paralysis |
| 1 | Premature Birth (specify gestational age at birth) [wks] |
| 1 | Seizure/Seizure Disorder |
| 1 | Sickle Cell Anemia |
| 1 | Smoker (current) |
| 1 | Solid Organ Malignancy |
| 1 | Solid Organ Transplant |
| 1 | Splenectomy/Aplasia |
| 1 | Other prior illness (specify): |
Vaccinations
Vaccination Recommendations

- **PCV 13 (Prevnar 13)**
  - Children 2 years of age and younger
  - Adults 65+
  - Adults 19+ with certain illnesses (HIV and kidney disease)

- **PPSV23 (Pneumovax 23)**
  - Adults 65+
  - Children under 2 years of age and Adults 19+ with certain illnesses (diabetes and heart disease)
### 2017 Recommended Immunizations for Adults: By Age

#### Talk to your healthcare professional about these vaccines

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Flu</th>
<th>Td/Tdap</th>
<th>Td/Tdap, diptheria, pertussis</th>
<th>Shingles</th>
<th>Pneumococcal</th>
<th>Meningococcal</th>
<th>MMR</th>
<th>HPV</th>
<th>Hepatitis A</th>
<th>Hepatitis B</th>
<th>Hib</th>
<th>Hemophilus influenzae type-b</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 - 21 years</td>
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<td>22 - 26 years</td>
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<tr>
<td>27 - 59 years</td>
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<td>60 - 64 years</td>
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<td>65+ years</td>
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</tbody>
</table>

### More Information:

- **Recommended For You:** This vaccine is recommended for you unless your healthcare professional tells you that you do not need it or should not get it.
- **May Be Recommended For You:** This vaccine is recommended for you if you have certain risk factors due to your health condition or other. Talk to your healthcare professional to see if you need this vaccine.

#### Flu:

- You should get the vaccine every year. You should get a booster every 10 years. You should get a Td/Tdap vaccine during every pregnancy in late or early the 2nd trimester. You should get 1 dose of Tdap. Women should get a Td/Tdap vaccine during every pregnancy to protect the baby.

#### Pneumococcal:

- You should get 1 dose of PCV13 and 1 dose of PPSV23 depending on your age and health condition.

#### HPV:

- You should get 1 dose of PCV13 and 1 dose of PPSV23 for women. You should get 1 dose of PPSV23 for men.

#### Meningococcal:

- You should get Meningococcal for younger children, adolescents, and young adults. You should get 1 dose of Meningococcal as an adult.

#### Hepatitis B:

You should get 3 doses of Hepatitis B vaccine with a fourth dose 12 months later if you are a woman or a man through age 26 years and did not already complete the series.

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For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines

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U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

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Kansas State University
# 2017 Recommended Immunizations for Adults: By Health Condition

If you have this health condition, talk to your healthcare professional about these vaccines.

<table>
<thead>
<tr>
<th>Health Condition</th>
<th>Flu Vaccine</th>
<th>Tetanus, Diphtheria, Pertussis</th>
<th>Shingles Vaccine</th>
<th>Pneumococcal Vaccine</th>
<th>Meningococcal Vaccine</th>
<th>MMR Vaccine</th>
<th>HPV Vaccine</th>
<th>Hepatitis A Vaccine</th>
<th>Hepatitis B Vaccine</th>
<th>Hib Vaccine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>You should get the vaccine every year.</td>
<td>You should get a booster every 10 years.</td>
<td>You should get a dose of Shingles vaccine during every pregnancy.</td>
<td>You should get a dose of PCV13 and at least 1 dose of PPV23 if you are age 65 years or older, or have high-risk conditions.</td>
<td>You should get a dose of MenB if you are at high risk for meningococcal disease.</td>
<td>You should get at least 1 dose of MMR vaccine.</td>
<td>You should get at least 3 doses of HPV vaccine if you are a woman through age 26 years or a man through age 21 years and have not previously completed the series.</td>
<td>You should get the vaccine if you did not get it when you were a child.</td>
<td>You should get the vaccine if you do not have a spleen, have sickle cell disease, or have had bone marrow transplant.</td>
<td></td>
</tr>
<tr>
<td>Weakened Immune System</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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</tr>
<tr>
<td>HIV: CD4 count less than 200</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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<td><strong>Recommended</strong></td>
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</tr>
<tr>
<td>HIV: CD4 count 200 or greater</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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<tr>
<td>Kidney disease or poor kidney function</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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<tr>
<td>Aspergillosis or other fungal infections</td>
<td><strong>Recommended</strong></td>
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<td><strong>Recommended</strong></td>
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<tr>
<td>Heart disease or chronic lung disease</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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<td><strong>Recommended</strong></td>
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<tr>
<td>Diabetes (Type 1 or Type 2)</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
<td></td>
</tr>
<tr>
<td>Chronic Liver Disease</td>
<td><strong>Recommended</strong></td>
<td><strong>Recommended</strong></td>
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</tbody>
</table>

**For more information, call 1-800-CDC-INFO (1-800-232-4636) or visit www.cdc.gov/vaccines**
Objectives:

1) To evaluate ABC’s data from REDCap and Access to identify the high-risk conditions of patients with IPD

2) To provide awareness of vaccination gaps within the IPD population
Methods: Data Collection

• An IPD case is defined as a positive culture of *Streptococcus pneumoniae* in an adult (aged ≥ 19 years old) with one or more high-risk conditions within the Tennessee catchment areas.
## Case Report Form

### Case Information
- **Patient Name:** (Field name)
- **Date of Birth:** (Field name)
- **Sex:** Male/Female
- **Residence:** (Field name)
- **Home Phone:** (Field name)
- **Work Phone:** (Field name)
- **Hospital:** (Field name)
- **Case ID:** (Field name)

### General Information
- **Reason for Visit:** (Field name)
- **Type of Case:** (Field name)
- **Date of Onset:** (Field name)
- **Date of Confirmation:** (Field name)
- **Date of Death:** (Field name)

### Symptoms
- **Principal Complaint:** (Field name)
- **Other Complaints:** (Field name)

### Medical History
- **Present Illness:** (Field name)
- **Past Medical History:** (Field name)
- **Family History:** (Field name)
- **Allergies:** (Field name)

### Physical Examination
- **Temperature:** (Field name)
- **Blood Pressure:** (Field name)
- **Pulse:** (Field name)
- **Respiratory Rate:** (Field name)
- **Weight:** (Field name)

### Laboratory Results
- **Complete Blood Count (CBC):** (Field name)
- **Serum Chemistry Panel:** (Field name)
- **URinalysis:** (Field name)
- **Special Tests:** (Field name)

### Diagnosis
- **Primary Diagnosis:** (Field name)
- **Secondary Diagnoses:** (Field name)

### Treatment
- **Medications:** (Field name)
- **Dosages:** (Field name)
- **Instructions:** (Field name)

### Follow-Up
- **Follow-Up Date:** (Field name)
- **Follow-Up Plan:** (Field name)

### Conclusion
- **Final Diagnosis:** (Field name)
- **Outcome:** (Field name)

### Signature
- **Physician:** (Field name)
- **Date:** (Field name)

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### Survey
- **Patient Satisfaction:** (Field name)
- **Staff Competency:** (Field name)

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**KSU Libraries**

[Logo]

[Website]
Methods: Data Analysis

- 2011-2012 IPD data extracted from Access
- 2013-2016 IPD data extracted from REDCap

Total number of IPD cases=2,693 (years 2011-2016)

- All data complied into one excel worksheet
Phase 1: IPD Study Population
Demographics
Ethnic Origin

- Hispanic/Latino: 24%
- Not Hispanic/Latino: 75%
- Unknown: 1%
Hospital and ICU %

Hospital and ICU % For Each Age Group

- 19-49: 87.55% Hospital, 35.20% ICU
- 50-64: 99.48% Hospital, 48.36% ICU
- 65-84: 54.66% Hospital, 43.02% ICU
- 85+: 91.72% Hospital, 28.88% ICU
Prevalent IPD Underlying Conditions

- ASCVD: 16.34%
- Diabetes: 25.99%
- COPD: 28.78%
- Smoker: 36.84%
- Other: 18.98%
Phase 2: Most Prevalent IPD Underlying Conditions (by age)
IPD Underlying Conditions

<table>
<thead>
<tr>
<th></th>
<th>ASCVD</th>
<th>Diabetes</th>
<th>COPD</th>
<th>Smoker</th>
<th>Othill</th>
</tr>
</thead>
<tbody>
<tr>
<td>19-49</td>
<td>2.50%</td>
<td>12.65%</td>
<td>7.96%</td>
<td>41.84%</td>
<td>17.14%</td>
</tr>
<tr>
<td>50-64</td>
<td>10.24%</td>
<td>25.18%</td>
<td>30.09%</td>
<td>51.10%</td>
<td>19.23%</td>
</tr>
<tr>
<td>65-84</td>
<td>25.32%</td>
<td>33.37%</td>
<td>38.88%</td>
<td>30.09%</td>
<td>19.49%</td>
</tr>
<tr>
<td>85+</td>
<td>30.13%</td>
<td>27.15%</td>
<td>26.82%</td>
<td>4.64%</td>
<td>19.54%</td>
</tr>
</tbody>
</table>
Phase 3: IPD Vaccination Gaps
Vaccination Percentages for 19-49 Age Group

<table>
<thead>
<tr>
<th></th>
<th>ASCVD</th>
<th>Diabetes</th>
<th>COPD</th>
<th>Smoker</th>
<th>Othill</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>25.00%</td>
<td>14.516%</td>
<td>25.641%</td>
<td>9.756%</td>
<td>14.286%</td>
</tr>
<tr>
<td>No</td>
<td>25.00%</td>
<td>32.26%</td>
<td>20.51%</td>
<td>31.707%</td>
<td>33.333%</td>
</tr>
<tr>
<td>Unknown</td>
<td>50.00%</td>
<td>53.23%</td>
<td>53.85%</td>
<td>58.54%</td>
<td>52.38%</td>
</tr>
</tbody>
</table>
Vaccination Percentages for 50-64 Age group

<table>
<thead>
<tr>
<th></th>
<th>Yes (%)</th>
<th>No (%)</th>
<th>Unknown (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCVD</td>
<td>27.55%</td>
<td>18.26%</td>
<td>44.90%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>23.61%</td>
<td>32.37%</td>
<td>49.38%</td>
</tr>
<tr>
<td>COPD</td>
<td>16.36%</td>
<td>29.65%</td>
<td>53.99%</td>
</tr>
<tr>
<td>Smoker</td>
<td>16.85%</td>
<td>34.78%</td>
<td>48.37%</td>
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<tr>
<td>Othill</td>
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</table>
Vaccination Percentages for Age Group 65-84

<table>
<thead>
<tr>
<th></th>
<th>ASCVD</th>
<th>Diabetes</th>
<th>COPD</th>
<th>Smoker</th>
<th>Othill</th>
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</thead>
<tbody>
<tr>
<td><strong>Yes</strong></td>
<td>31.80%</td>
<td>31.43%</td>
<td>31.61%</td>
<td>25.00%</td>
<td>16.85%</td>
</tr>
<tr>
<td><strong>No</strong></td>
<td>15.06%</td>
<td>16.51%</td>
<td>17.44%</td>
<td>22.887%</td>
<td>26.087%</td>
</tr>
<tr>
<td><strong>Unknown</strong></td>
<td>53.14%</td>
<td>52.06%</td>
<td>50.95%</td>
<td>52.11%</td>
<td>57.07%</td>
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Vaccination Percentages for Age Group 85+

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCVD</td>
<td>40.66%</td>
<td>15.38%</td>
<td>43.96%</td>
</tr>
<tr>
<td>Diabetes</td>
<td>40.24%</td>
<td>18.29%</td>
<td>41.46%</td>
</tr>
<tr>
<td>COPD</td>
<td>35.80%</td>
<td>16.05%</td>
<td>48.15%</td>
</tr>
<tr>
<td>Smoker</td>
<td>21.43%</td>
<td>7.143%</td>
<td>71.43%</td>
</tr>
<tr>
<td>Othill</td>
<td>32.20%</td>
<td>25.424%</td>
<td>42.37%</td>
</tr>
</tbody>
</table>
Vaccine Types for All Age Groups

- PCV7/PCV13
- PPSV23
2011 Percentages for Underlying Conditions within Vaccine Types by Age

- PCV7/13
- PPSV23
- Unknown

- ASCVD
- Diabetes
- COPD
- Smoker
- Othill
2012 Percentages for Underlying Conditions within Vaccine Types by Age

- PCV7/13
- PPSV23
- Unknown

Age Groups:
- 19-49
- 50-64
- 65-84
- 85+

Conditions:
- ASCVD
- Diabetes
- COPD
- Smoker
- Othill
2013 Percentages for Underlying Conditions within Vaccine Types by Age

- PCV7/13
- PPSV23
- Unknown

Age Groups:
- 19-49
- 50-64
- 65-84
- 85+

Conditions:
- ASCVD
- Diabetes
- COPD
- Smoker
- Othill
2014 Percentages for Underlying Conditions within Vaccine Types by Age

- ASCVD
- Diabetes
- COPD
- Smoker
- Othill
2015 Percentages for Underlying Conditions within Vaccine Types by Age
2016 Percentages for Underlying Conditions within Vaccine Types by Age

- ASCVD
- Diabetes
- COPD
- Smoker
- Other

<table>
<thead>
<tr>
<th>Vaccine Type</th>
<th>Age Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>PCV7/13</td>
<td>19-49</td>
</tr>
<tr>
<td>PPSV23</td>
<td>50-64</td>
</tr>
<tr>
<td>Unknown</td>
<td>65-84</td>
</tr>
<tr>
<td>PCV7/13</td>
<td>85+</td>
</tr>
</tbody>
</table>
Dual Vaccine Recommendation

- Evaluated the percentages of the vaccinated population that received dual vaccines
  - less than 1.7% of the age group, 65-84,
  - and less than 2.2% of the age group, 19-49,
  received the recommended dual vaccines
Data Summary

• Phase 1 – Largest Populations
  ✓ Age: 50-64
  ✓ Race: Caucasian
  ✓ Ethnic Origin: Not Hispanic
  ✓ Hospital/ICU group: 50-64
  ✓ Most prevalent underlying conditions: ASCVD, Diabetes, COPD, Smoker, Other illnesses
Data Summary:

• Phase 2
  ✓ 19-49: Smoker
  ✓ 50-64: Smoker
  ✓ 65-84: COPD
  ✓ 85+: ASCVD
Data Summary:

• Phase 3:
  ✓ Vaccination Percentages for each age group:
    • 19-49: 11%
    • 50-64: 18%
    • 65-84: 31%
    • 85+: 40%
  ✓ Vaccine Types for all age groups: PPSV 23
  ✓ Low percentage of dual vaccinations in all age groups
Conclusion:

Analyses was conducted to shed light on IPD high-risk conditions and vaccination gaps among those with IPD

- Most prevalent high-risk condition is smoking
- Younger age groups are going unvaccinated
- Majority of patients mark unknown vaccination status
- Low percentages of dual vaccines

*PPSV23 serotypes: 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, and 33F

*PCV13 serotype: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F

Active Bacterial Core surveillance data, 1998–2015, unpublished

PCV7 introduction

PCV13 introduction for children

PCV13 recommendations for immunocompromised adults 19+

PCV13 recommendations for adults 65+

Cases per 100,000

Year


PPSV23 serotypes: 1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19A, 19F, 20, 22F, 23F, and 33F

PCV13 serotype: 1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F, and 23F

Active Bacterial Core surveillance data, 1998–2015, unpublished
Limitations

• Small study population
• Incomplete CRFs
• Unknown Vaccination Statuses
• Lack of communication between patients and healthcare providers (i.e. medical terminology)
Future Studies

• A larger study population
• Comparison of IPD data within all ten EIP states
• Vaccination gaps among pregnant women with IPD high-risk conditions
• Measure the risk of reoccurrence of IPD in same study population
• Measure the risk of IPD in Hepatitis C patients
Outline

• Brief Introduction of Field Experience
• Minor Project: SNiPP Data Entry
• Major Project: High Risk Conditions and Vaccination Gaps in IPD

  • Core Competencies

  • Questions
Core Competencies

• **Biostatistics:** Use of descriptive statistics and statistical analyses

• **Environmental Health:** Acknowledgement of the link between disease and the environment

• **Epidemiology:** Use and understanding of surveillance methods and terms
Core Competencies

• **Health Administration:** Use of HIPAA regulations and understanding of the U.S. healthcare system

• **Social and Behavioral Science:** Acknowledgment of the link between demographics with certain diseases and health disparities
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Questions?
References


