UF Continuing Medical Education
UNIVERSITY of FLORIDA

PeerView INSTITUTE FOR MEDICAL EDUCATION

Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Outcomes Presentation of the Live Webcast, OnDemand Program and Live inClinic Meetings

Presented to Pfizer Inc.

Grant ID 045138

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PeerView INSTITUTE FOR MEDICAL EDUCATION

Executive Summary

- University of Florida College of Pharmacy requested $387,860 from Pfizer Inc. to develop a CPE PeerView Live, onDemand, inClinic Curriculum, and PI/QI practice integration initiative
  - **Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization**
  - An integrated series comprising a video Webcast activity offered in live and onDemand formats; four live meetings held at UF College of Pharmacy sites in Jacksonville, Orlando, Tampa, and Gainesville; and a PI/QI practice integration initiative at three University of Florida care sites
- The activity was produced and announced in multiple formats and media to appeal to each individual pharmacist's preferences and learning style (see slides 28-40)
  - Live online Webcast available at: www.peerviewpress.com/RxPreventIPD
  - onDemand enduring
    - Online via unique URL: www.peerviewpress.com/d21
    - MP3/podcast
    - Downloadable slide sets, transcripts, and practice aids
  - Print: Direct-mailed monograph to 5,300 members of the target audience with a historical preference for print formats
- Pfizer Inc. approved the grant at a funding level of $387,860 (Grant ID: 045138)
  - Date funded: December 11, 2012
  - This activity was cost-efficient
    - $73.18 per pharmacist to reach 5,300 pharmacists (Includes mailing print monographs)

Executive Summary

- **Educational Objectives**
  - Describe the clinical implications of pneumococcal disease in adults
  - Identify risk factors for pneumococcal disease in adults
  - Employ current guidelines for immunization and reimmunization against pneumococcal disease in adults
  - Identify and overcome barriers that contribute to low pneumococcal vaccination rates in adult patients
  - Discuss the efficacy and safety of available pneumococcal vaccines for adults
  - Increase pneumococcal vaccination rates in appropriate patients based on improvement as an educator, facilitator, and immunizer

Executive Summary

- Course Directors
  - Webcast & onDemand
    - **Phillip L. Barkley**, **MD**

      University of Florida

      Director, Student Health Care Center
      University of Florida
      Gainesville, Florida
- Faculty
  - inClinics
    - **Phillip L. Barkley,** University of Florida
    - **R. Whit Curry, Jr., MD,** University of Florida
- Activity Dates
  - Webcast: April 24, 2013
  - onDemand Launch Date: June 28, 2013
  - inClinics: June 2013 – November 2013
  - PI/QI practice integration initiative: Ongoing
- Target Audience
  - Target audience: 5,300 pharmacists active in practice
  - We do not actively target foreign physicians, nonrelevant US-based specialists, retired physicians or clinicians, or researchers

Executive Summary – *Outcomes*

- Level 1 – Participation (see slides 8-13)
  - Live webcast, onDemand, and inClinic
    - » 2,023 total professionals participated in the activity through the live meetings, online and/or print formats (excludes additional podcast participants accessing solely via iTunes)
      - Total participant breakdown
        - 1,890 validated, US-based pharmacists
        - 18 validated, US-based community pharmacists
        - 45 validated, US-based hospital-based pharmacists
        - 4 validated, US-based general practitioners
        - 14 validated, US-based MDs
        - 10 validated, US-based other MDs/HCPs
        - 42 other Ex-US other MDs/HCPs
    - » 1,137 activity material downloads (slides, transcripts, practice aids, podcasts, etc.)

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**University of Florida Performance Improvement Initiative – *Summary and Participation*

- University of Florida identified a significant gap with respect to pneumococcal disease prevention in adults, developing into the hybrid of Performance Improvement CME and traditional CME education that this curriculum offers
  - Performance Improvement focused on three primary care practice sites within the University of Florida Physicians medical group practice. These practices were coached face-to-face on the integration of performance improvement within their practices.

- Participation
  - University of Florida Performance Improvement Practices
    - **UF Shands Eastside Community Practice:** 14,000 family practice visits annually
    - **UF & Shands Family Medicine at Main:** Residency and faculty practice site with 25,000 family medicine visits annually
    - **The UF Student Health Care Center:** >70,000 primary care/women's health visits annually

University of Florida Performance Improvement Initiative - *Summary*

- In the ambulatory practices at the University of Florida, the pharmacist role in the intervention has been to share the educational material with the care team and with patients in an effort to boost immunization rates. The pharmacist is a key, respected member of the health care team within the practices who can influence important decisions such as pneumococcal immunization.

- Prior to the launch of the Performance Improvement initiative, the University of Florida created a comprehensive presentation, which outlines the burden of disease, discusses vaccine recommendations, and then addresses barriers to vaccination and ways to overcome those barriers.

- The education also clearly outlines the pivotal role that pharmacists play in improving vaccination rates and reducing the burden of vaccine preventable diseases on the population.

- A series of Practice Aids were also created, providing learners with tangible tools to apply the education in the clinical setting.

PI Initiative at the University of Florida

University of Florida College of Medicine
Office of CME

Initial Assessment
↓
Kick-Off Meeting
↓
Tool Implementation
↓
Weekly Progress Checks
↓
Ongoing Modification
↓
Final Reassessment

Practice Champion

UF Shands Eastside Community Practice

14,000 family practice visits annually

Practice Champion

UF & Shands Family Medicine at Main

Residency and faculty practice site with 25,000 family medicine visits annually

Practice Champion

The UF Student Health Care Center

>70,000 primary care/women's health visits annually; 4.8 FTE pharmacists and 2.0 FTE pharmacy techs; 13 PCPs; 10 NPs and 3 PAs

All 3 sites offer onsite pharmacy services:

University of Florida Performance Improvement Initiative - *Summary*

- Stage A
  - Baseline chart review of performance on providing the pneumococcal vaccine at the 3 practices
    - Led by the Director of Clinical Quality, room for improvement was revealed

- Stage B
  - Practices were given the results of the Baseline Chart Review. Implementation began of the PI initiative within the practices begins.
    - The results were delivered to the practices, and the practice tools and reminders were rolled out to the participants for immediate use within the practices.
    - The healthcare professionals were provided with a PowerPoint presentation outlining the importance of the pneumococcal vaccination and had the opportunity to ask questions.

- Stage C
  - A second baseline chart review of performance on providing the pneumococcal vaccine at both practices was held
    - Led by the Director of Clinical Quality, improvement was greatly observed at 2 of the practices after the intervention workflow was adjusted within the practices.
    - Approximately 90 days after the implementation of the initiative adjustments, and the second chart audit was initiated

University of Florida Performance Improvement Initiative - *Summary*

- The intervention workflow rolled out as follows:
  - Patient file is flagged during chart review/EMR audit
  - Upon arrival to next appointment, patient is screened as a candidate for pneumococcal vaccination
  - Pharmacist directly meets with patient and provides education regarding the importance of pneumococcal vaccination; encouragement to receive the vaccination will also be provided.
  - Via participation in the live webcast and/or enduring programs, the pharmacist will have all of the practical tools and resources to facilitate pneumococcal vaccination in appropriate patients
  - Upon receiving patient consent, pharmacist will immediately administer the pneumococcal vaccine

Implementation Adjustments

Weekly Practice Meetings revealed workflow barriers that need to be addressed

- Student Health Center
  - Student Health is following a workflow that is different from what we originally anticipated. Due to workflow considerations, the pharmacist does not directly administer the immunization.
  - Even though the pharmacist is not administering the immunization, he/she is providing (and has been providing since we launched the project) direct counseling to patients at risk and describing why they need the immunization based upon their health status.
  - Once the direct counseling takes place, the pharmacist guides the patient to see a nurse in the practice who can administer the immunization. The pharmacists are seeing the patients first, and they are using a "bookmark" to notify the nurses when the patient has been counseled and would like to receive the immunization.

- UF & Shands Family Medicine at Main
  - The pharmacist does not typically come into contact with patients.
  - The pharmacist at that location is responsible for pharmacy student education and oversees all of the pharmacy residents in their work within the practice.
  - The pharmacist created a brief patient education piece as well as a provider piece as tools to increase awareness of the importance of vaccination.

Implementation Adjustments Continued

Weekly Practice Meetings revealed barriers that need to be addressed

- UF Shands Eastside Community Practice
  - The pharmacist does see patients and is able to provide counseling on the importance of the pneumococcal (and other) immunizations. However, the pharmacist advises the patient to receive the immunizations, records it in the chart, and sends the patient to the nursing group administer the immunizations.
  - The solution was to 'flag' patients who are eligible for the vaccine. The pharmacist at Eastside to counsel the patient and send them on to receive the vaccine.

At all sites, the nurses are the ones who administer the immunization. The pharmacists can provide some expertise through counseling, patient education materials, and steering patients to the nurse for the immunization. Though the individual technically administering the immunization at the sites is different than what we originally had contemplated, the pharmacist is able to intervene at each of the sites to achieve the goal: immunize appropriate patients.

Level 5 Outcomes – *Quality Improvement Initiative*

Patients Aged 65+ Receiving Pneumococcal Vaccinations at the University of Florida Main Street and Eastside Clinics

Data Set	Patients	Vaccinated	Vaccination Rate (%)
2013 - Baseline	900	378	42
2014 - Entire Year	1949	994	51

A 21.4% statistically significant percent increase in vaccination rate pre to post was observed (χ^2 $p<0.05$)

Adjustments in the workflow process and the addition of patient and provider educational materials resulted in a marked increase in vaccination rates.

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Level 1 Outcomes – *Total Participation*

Participants by Activity Type	Live/Uncut Webcast	onDemand Online	onDemand Print	inClinic	Total
Pharmacists	54	380	1350 *(Florida Pharmacists only)*	106	1890
Community Pharmacists	0	18	0	0	18
Hospital Pharmacists	0	45	0	0	45
Target Audience Subtotal	54	443	1350	0	1953
General Practitioners	0	4	n/a	0	4
MDs	3	11	n/a	0	14
Other MDs/HCPs	0	6	n/a	4	10
Ex-US	0	42	n/a	0	42
Overall Total Participation	57	506	1350	110	2023

* Based on 4 sources: normative check studies, CME survey, CME credits earned and 3rd party research

Level 1 Outcomes – *Live Meeting Participation*

inClinic Meetings	UF College of Pharmacy, Gainesville June 11, 2013	UF College of Pharmacy, Jacksonville October 21, 2013	UF College of Pharmacy, Orlando November 7, 2013	UF College of Pharmacy, Tampa November 21, 2013
Faculty Speaker	Dr. P. Barkley	Dr. R. Curry	Dr. R. Curry	Dr. R. Curry
Pharmacist – All	77	12	3	14
RPH	56	9	2	0
CPhT	4	0	0	0
RPT	17	0	0	0
PharmD	3	3	1	14
Pharmacy Student	0	0	0	0
Other MD	0	0	0	0
Other MD/HCP	2	2	0	0
Ex-US	0	0	0	0
Total	80	14	3	14

Level 1 Outcomes – *Participation*

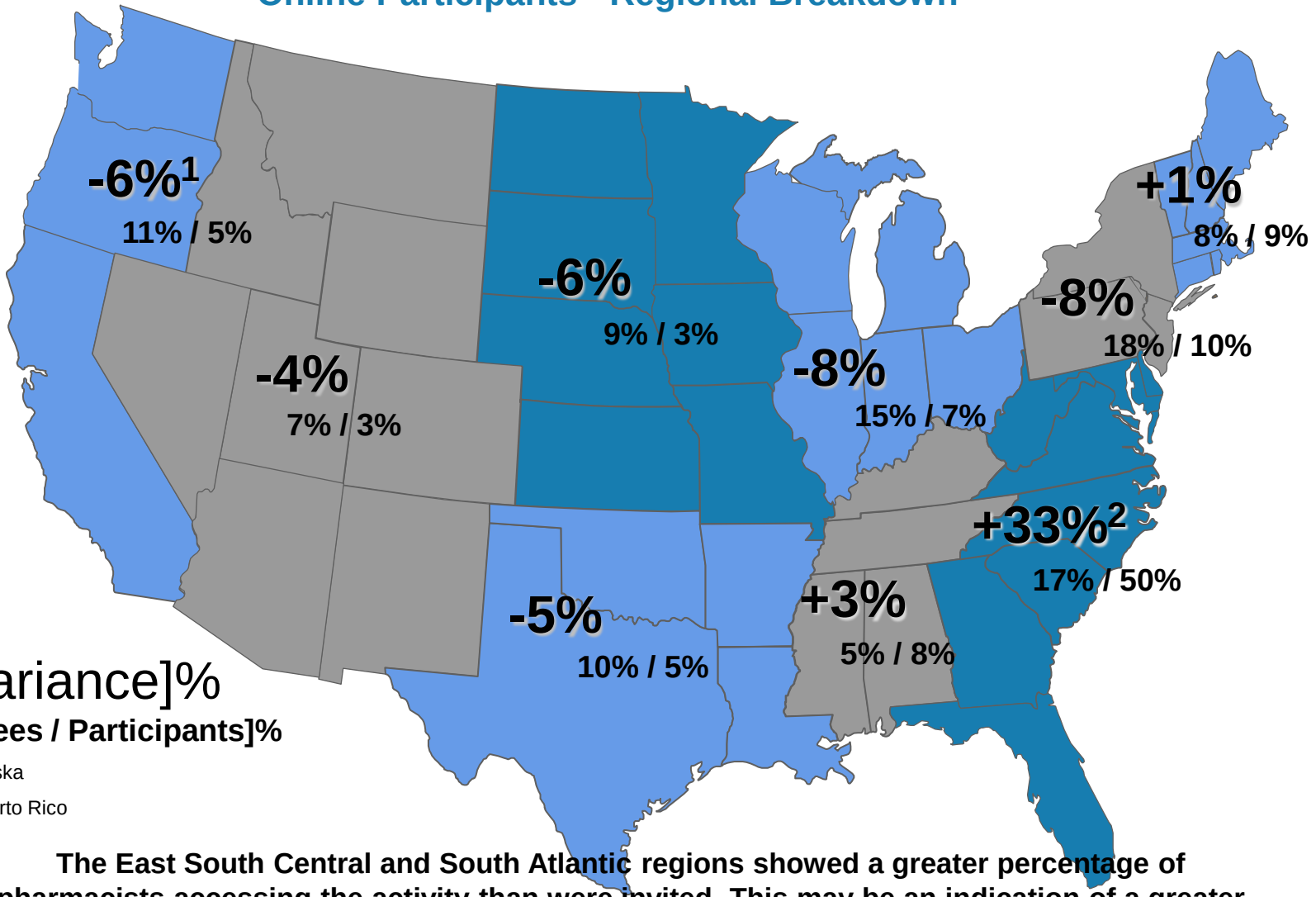
Activity Material Downloads

	Podcast Presentations Downloaded	Practice Aids Downloaded	Slide Presentations Downloaded	Transcript Presentations Downloaded	MP3 Presentations Downloaded
Downloads to date	897	76	60	52	52
Total Downloads	**1,137**				

Podcasts are downloaded by the activity's target audience, as well as a wider group of Podcast subscribers from the interested medical community.

Level 1 Outcomes – *Participation*

Online Participants - Regional Breakdown



+/-[Variance]%

[Invitees / Participants]%

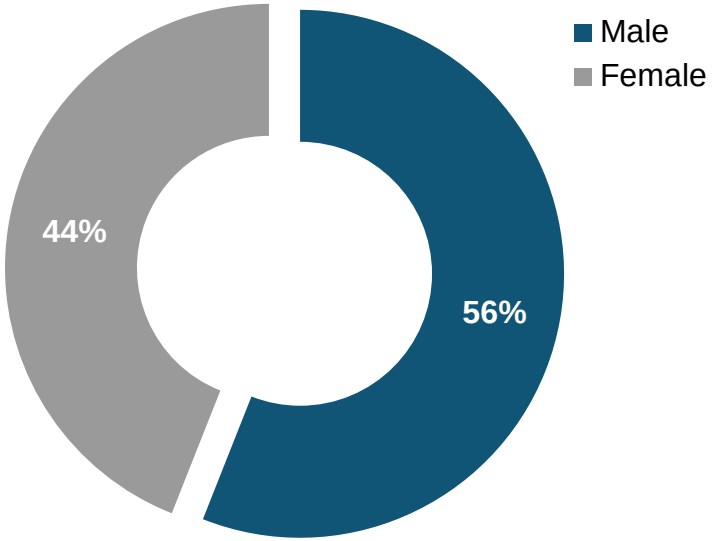
[1]Includes Alaska

[2]Includes Puerto Rico

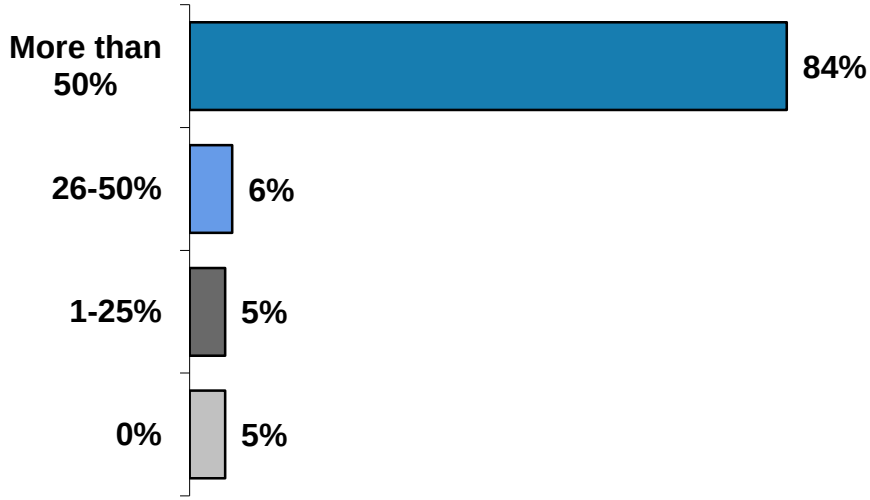
The East South Central and South Atlantic regions showed a greater percentage of pharmacists accessing the activity than were invited. This may be an indication of a greater interest or need for the education.

Level 1 Outcomes – *Participation*

Specialist Gender



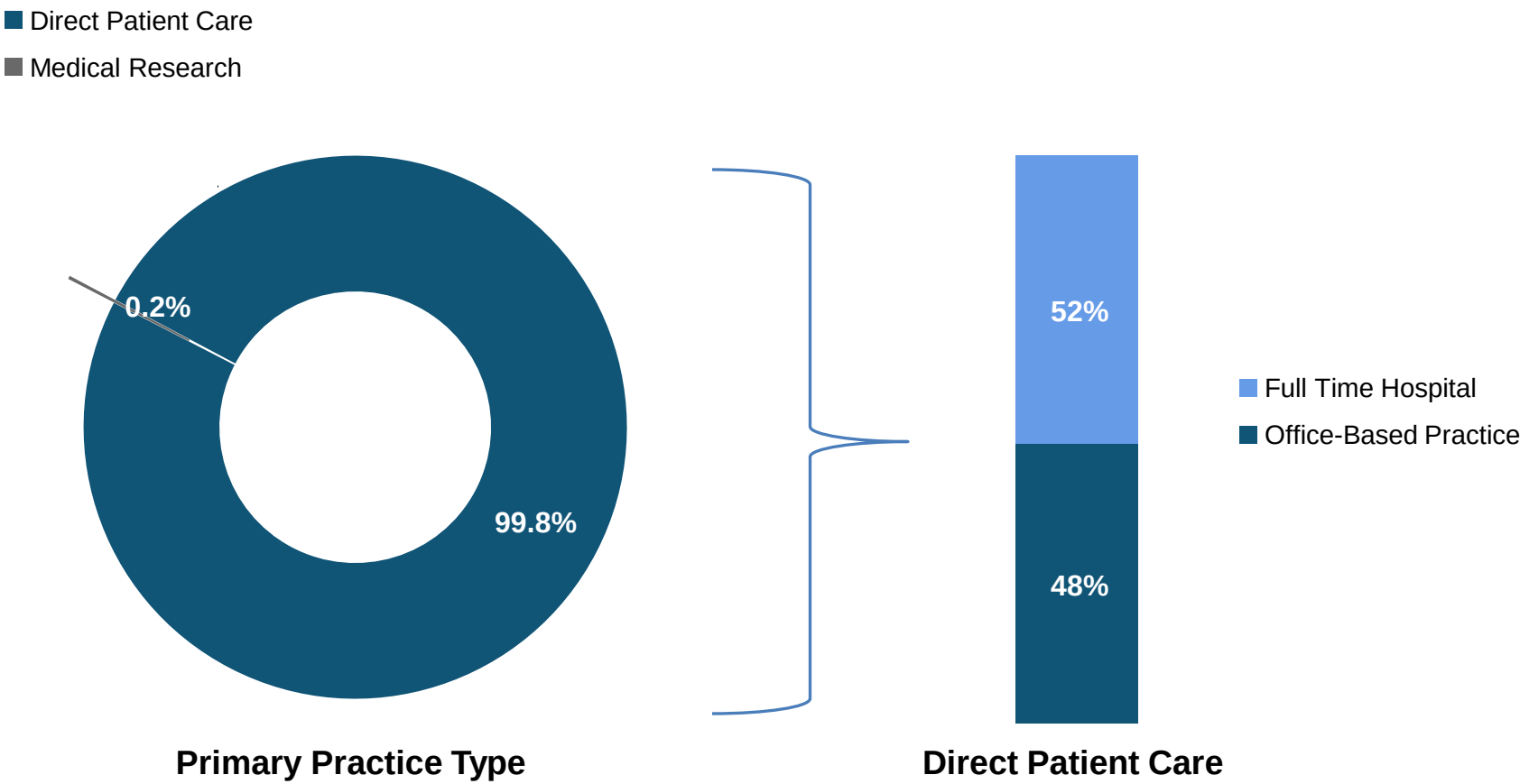
Patient Population: 18 years or older



Average License Year: 1990

Average # of Patients Per Week: 254

Level 1 Outcomes – *Participation*



Analysis: 99.8% of participants are focused on direct patient care, and 48% of these are office based.

Level 2 Outcomes – *Satisfaction*

Learners responded to the following questions in these areas using a 7-point Likert Scale.	This Activity (average)
Likert Scale: 1=Strongly Disagree, 7=Strongly Agree	
Extent to which PeerView Challenge Questions had a positive impact on learning	6.0
Content is fair, balanced, and free from commercial bias	5.6
Content is evidence-based	5.6
Format was easy to use / conducive to personal learning style	5.0
Likert Scale: 1=I am no more confident, 7=I am much more confident	
Improved confidence in providing patient care	5.4
Likert Scale: 1=No more able to meet this objective after participating, 7=Much more able to meet this objective after participating	
Extent to which the learner's ability to meet the educational objectives has increased	5.8
Likert Scale: 1=Not at all effective, 7=Very effective	
How effective were the post-test questions at measuring the educational objectives	5.5
Likert Scale: 1=Not at all likely, 7=Very likely	
Likelihood of participating in future activities on this topic presented in a similar format	5.6

Responses From Activity Evaluation Forms

Learners responded to questions in these areas by answering 'Yes' or 'No' or providing open-ended responses.	This Activity
Did this activity teach you anything new or original? *Open-ended responses include:*	**91% Yes**
It clarified PCV13 versus PPSV23, when to use each vaccine, and who needs vaccination. (10)	
Recommendations for immunocompromised patients (3)	
PCV13 effect on nasopharyngeal presence of the bacterial serotypes	
Pharmacist role in vaccinations	
How to educate patients, such as a flyer	
I knew very little about this disease.	
Are there barriers to you implementing this information into practice? *Open-ended responses include:*	**32% Yes**
Time to provide service (6)	
Non-clinical position (4)	
Lack of support personnel (2)	
Reimbursement issues (2)	

Participant Feedback

- Live webcast and Enduring program comments:
  - These slides and references websites are a great tool and reference!
  - After viewing this, I realized how much I needed this update and review of the vaccination guidelines.
  - Great, great, great!!!
  - Dr. Barkley was very efficient and concise in his delivery.
  - Thorough overview with expert clinical-based evidence. He was a passionate patient care provider.
  - Very enlightening as to the need for spreading the word about the seriousness of IPD. We'll definitely try to help improve vaccinations in the at-risk and elderly populations.
  - It clarified PVC13 vs PPSV23 and when to use each and who needs it.
  - Excellent program; thank you (20)
- Gainesville inClinic comments:
  - It was a very nice experience, and I enjoyed the whole program.
  - I learned a lot about immunizations and how it relates to my role as a tech.
  - The chart that describes vaccination guidelines in the specific subset of patients was very helpful.
  - I needed this update, as I am licensed to give the flu vaccines.
  - This was a very practical application that I will use.
  - Dr. Barkley was excellent and well-informed.
  - I learned the current protocols.
  - Reminders of 13 and 23
  - A very enjoyable presentation.
  - I appreciated the statistics.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*

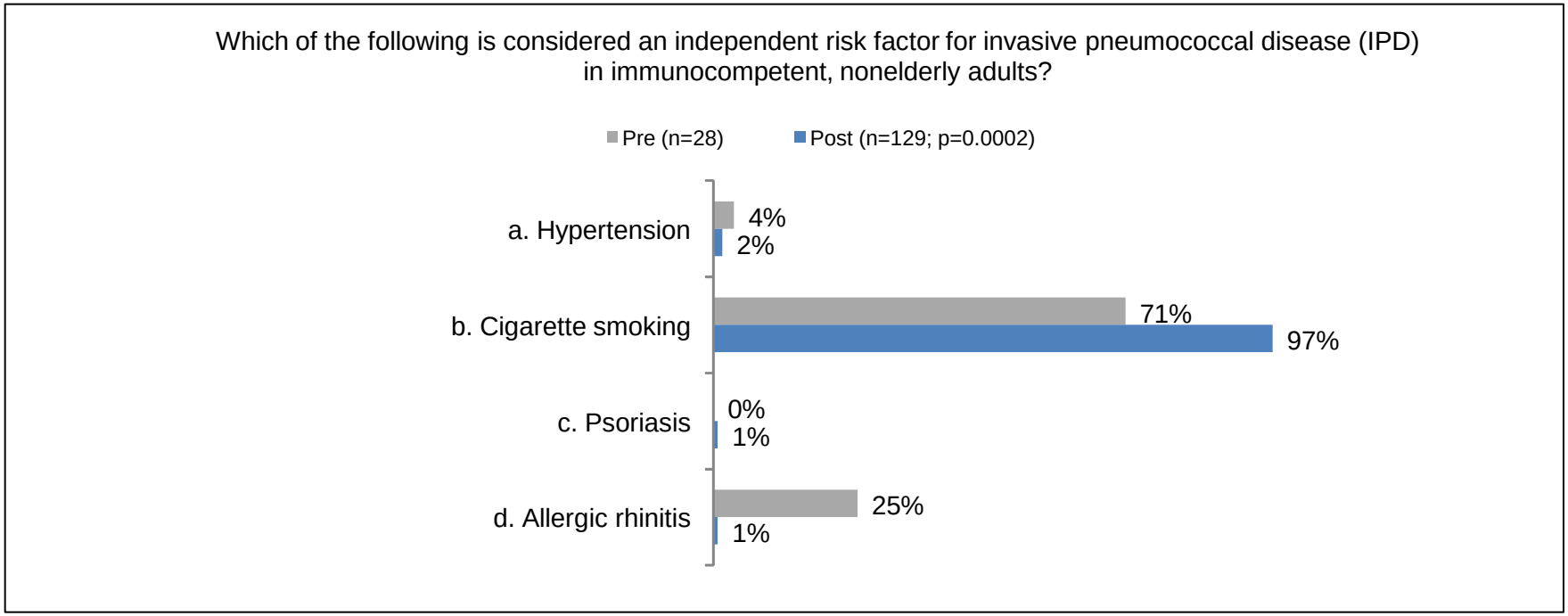
- Participants responded to a series of PeerView Challenge Questions
- PeerView Challenge Questions were asked prior to the scientific concepts being presented and thus served to assess baseline competency (pre responders)
- Participants later responded to the same questions after completing the activity (post responders)
- The following comparison measures comprehension and impact of the activity

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*

Which of the following is considered an independent risk factor for invasive pneumococcal disease (IPD) in immunocompetent, nonelderly adults?

- ***Related Learning Objective***: Identify risk factors for pneumococcal disease in adults.
- This question assesses the learner's ability to identify risk factors for pneumococcal disease in adults.
- Primary risk factors for pneumococcal disease include spleen dysfunction, sickle-cell anemia, alcohol abuse, chronic liver disease, ischemic cardiac diseases, congestive cardiac failure, diabetes mellitus, obesity, chronic lung disease, and advanced age. Furthermore, analysis of data obtained from a population-based case-control study found that cigarette smoking was the strongest independent risk factor for invasive pneumococcal disease among immunocompetent, nonelderly adults.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*



Correct answer: b.

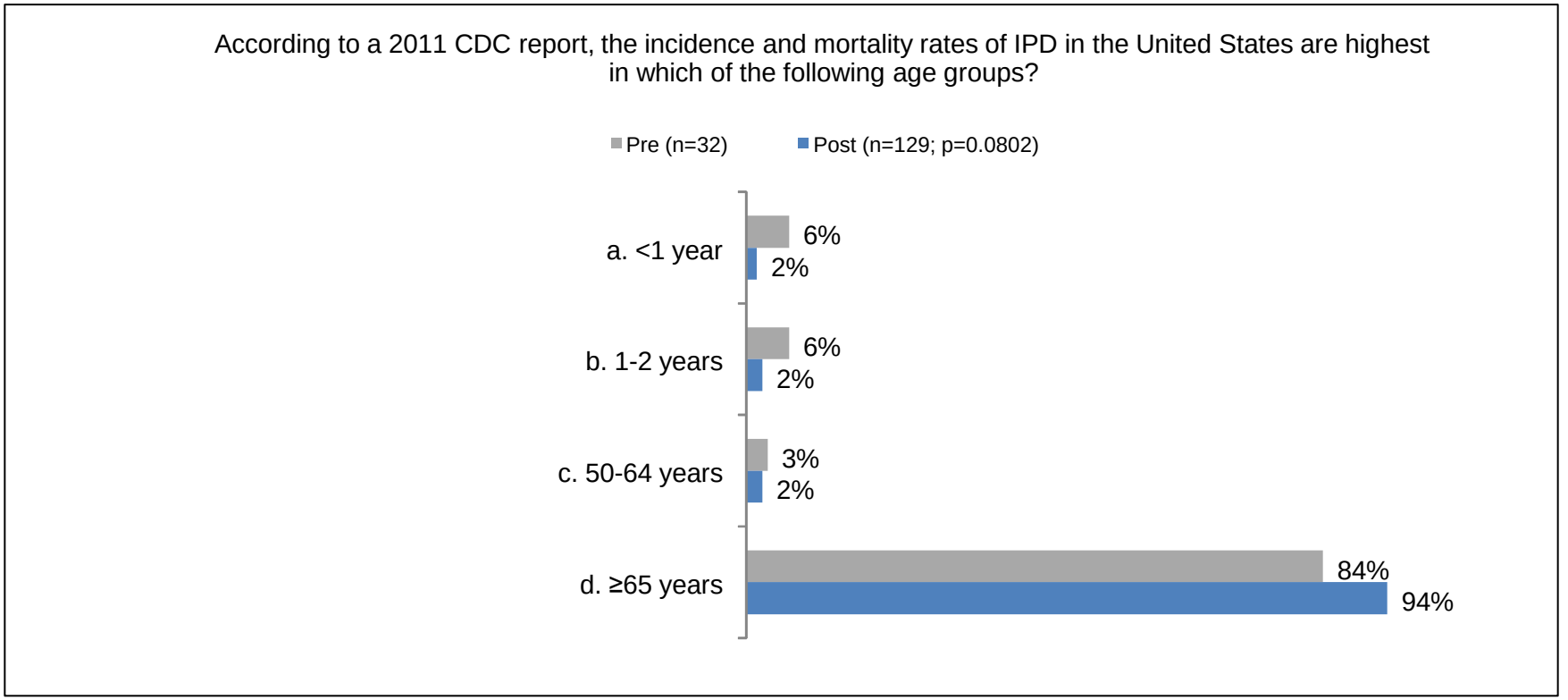
- 29% of pre-respondents were unable to correctly identify an independent risk factor for invasive pneumococcal disease (IPD) in immunocompetent, nonelderly adults. Though there was an increase in participants' awareness of this information after participating in the educational activity (97%), an important minority of professionals lacked baseline knowledge related to identification of risk factors for pneumococcal disease in adults. Future educational activities should focus on this topic, as awareness of risk factors is essential to identifying patients who should receive the pneumococcal vaccine.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*

According to a 2011 CDC report, the incidence and mortality rates of IPD in the United States are highest in which of the following age groups?

- ***Related Learning Objectives***: Describe the clinical implications of pneumococcal disease in adults; and Identify risk factors for pneumococcal disease in adults.
- This question assesses the learner's ability to recognize patients at risk for pneumococcal disease.
- According to a 2011 Active Bacterial Core surveillance (ABCs) report on *Streptococcus pneumonia*, the incidence of and deaths due to IPD were greater in elderly individuals (aged ≥65 years) compared with infants (<1 year of age) and younger adults.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*



Correct answer: d.

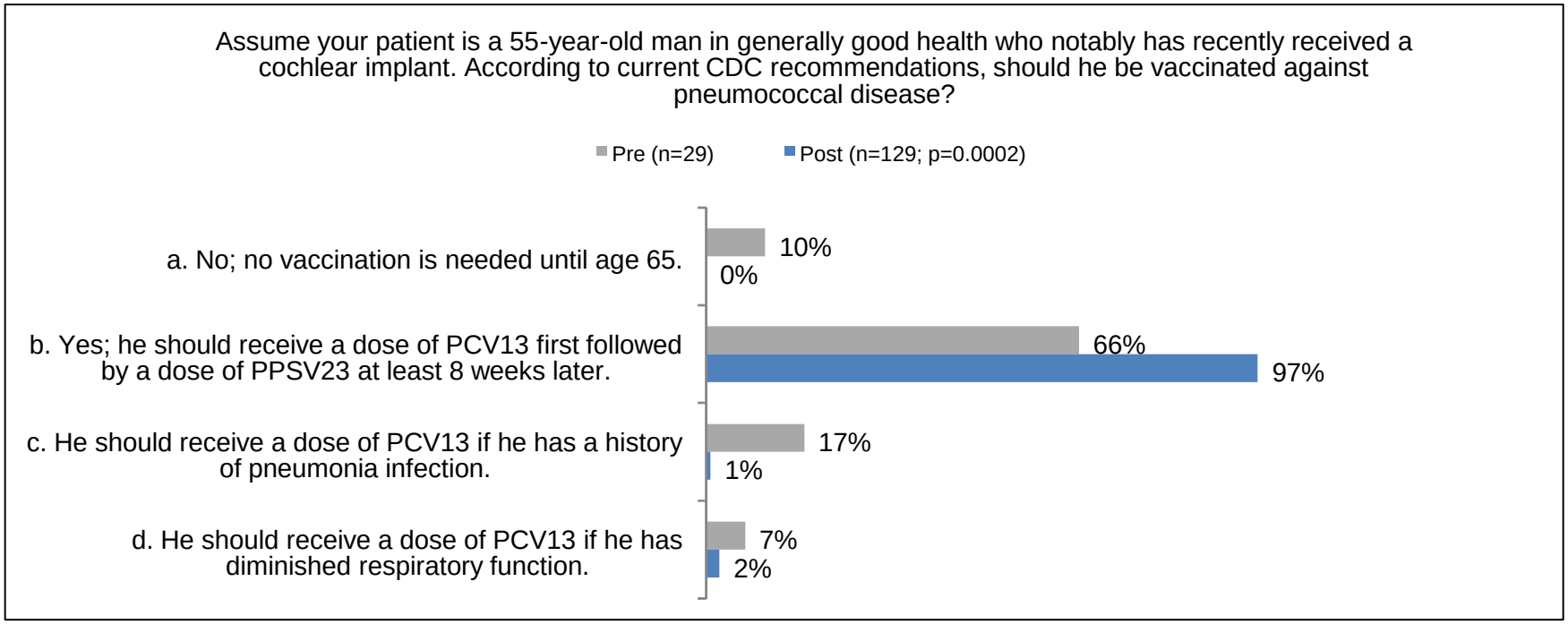
- 84% of pre-respondents correctly identified the age group in which incidence and mortality rates of IPD in the United States are highest, compared with 94% of post-responders. A small, but potentially significant minority of respondents (16%) were unaware that adults aged 65 years and older were most affected by IPD. Based on these findings, additional educational activities that include a component emphasizing the impact of IPD may be warranted.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*

Assume your patient is a 55-year-old man in generally good health who notably has recently received a cochlear implant. According to current CDC recommendations, should he be vaccinated against pneumococcal disease?

- ***Related Learning Objective***: Employ current guidelines for immunization and reimmunization against pneumococcal disease in adults.
- This question assesses the learner's ability to implement available consensus guidelines for the vaccination of adults to prevent pneumococcal disease.
- The Advisory Committee on Immunization Practices (ACIP) recommends that adults aged ≥19 years with immunocompromising conditions, functional or anatomic asplenia, cerebrospinal fluid (CSF) leaks, or cochlear implants; and those who have not previously received PCV13 or PPSV23, should receive a dose of PCV13 first, followed by a dose of PPSV23 at least 8 weeks later.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*



Correct answer: b.

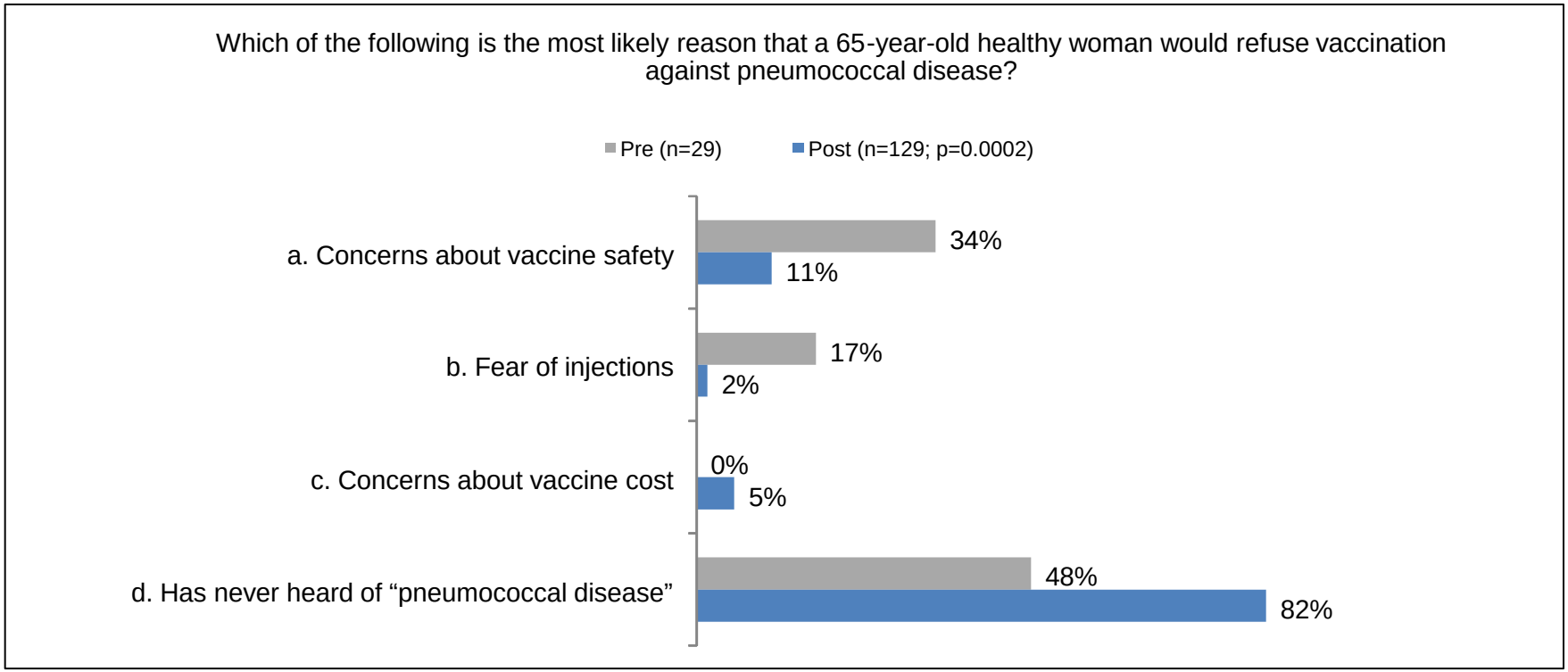
- 34% of pre-respondents were unware of current CDC recommendations regarding the pneumococcal vaccination of a 55-year-old man in generally good health who recently received a cochlear implant . Though there was an increase in participants' awareness of this information after participating in the educational activity (97%), an important minority of professionals lacked baseline knowledge and competence related to implementing available consensus guidelines for the vaccination of adults to prevent pneumococcal disease. Future educational activities should focus on this topic, as pneumococcal disease can be dangerous, and sometimes fatal, in people with certain chronic medical conditions; indeed, pneumococcal vaccination needs to be used more consistently to reduce the risk of pneumococcal infection in these individuals, and pharmacist immunizers are in a prime position to improve immunization rates.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*

Which of the following is the most likely reason that a 65-year-old healthy woman would refuse vaccination against pneumococcal disease?

- ***Related Learning Objective***: Identify and overcome barriers that contribute to low pneumococcal vaccination rates in adult patients.
- This question assesses the learner's ability to recognize barriers to pneumococcal vaccine uptake.
- The National Foundation for Infectious Diseases (NFID) recently commissioned a survey among consumers to assess their awareness and knowledge of adult vaccine-preventable disease. While adults' familiarity with most vaccine-preventable diseases is trending upward, awareness of pneumococcal disease falls dead last and has not improved since 2009. Only 20% of consumers surveyed were extremely familiar or very familiar with pneumococcal disease. There have been advances in awareness of other diseases like influenza, shingles, pertussis, hepatitis B, meningitis, and HPV (human papillomavirus). However, this has not been the case for pneumococcal disease.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*



Correct answer: d.

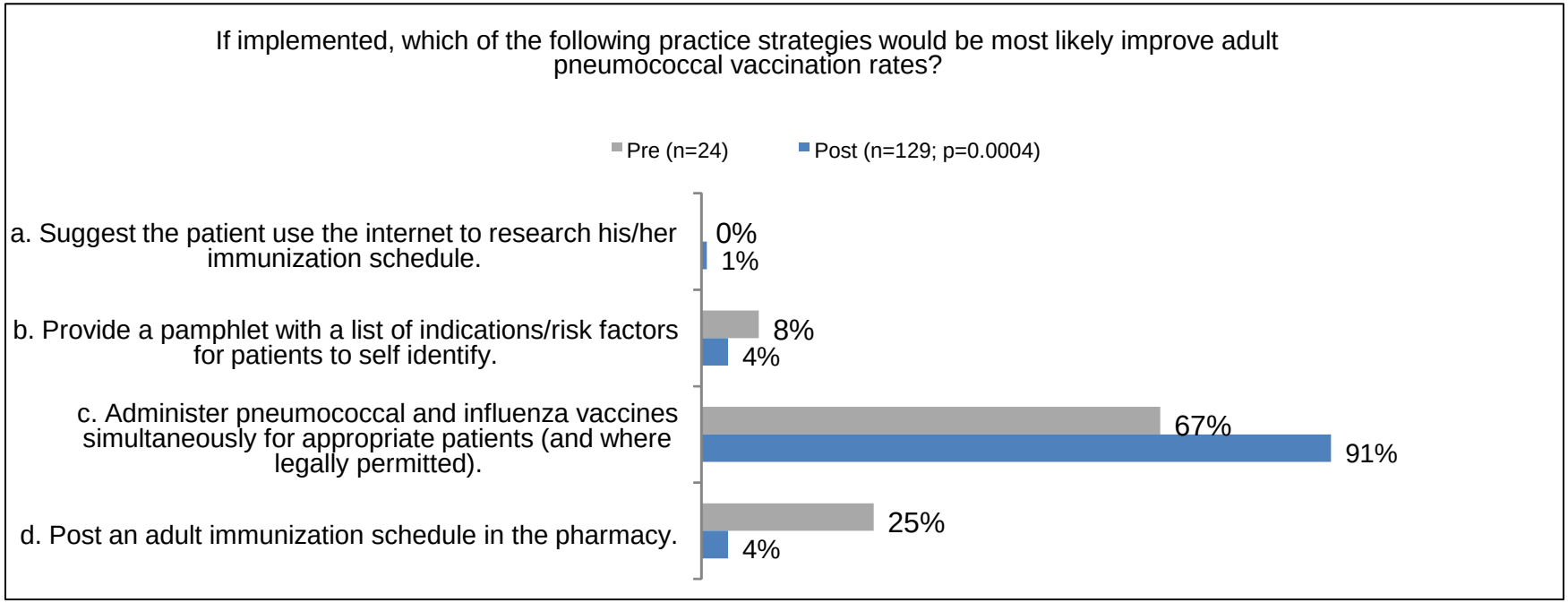
- 52% of pre-responders could not correctly identify the most likely reason that a 65-year-old healthy woman would refuse vaccination against pneumococcal disease. Given the number of vaccines recommended for adults and the suboptimal vaccination rates that continue to result in substantial mortality, pharmacists need to understand barriers to adult vaccine delivery and implement measures to overcome some of these challenges in the most accessible health care setting in America: the community pharmacy. Thus, there is a significant need for future educational programming designed to increase professional awareness of strategies to identify and overcome barriers that contribute to low pneumococcal vaccination rates in adult patients.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*

If implemented, which of the following practice strategies would be most likely improve adult pneumococcal vaccination rates?

- ***Related Learning Objectives***: Identify and overcome barriers that contribute to low pneumococcal vaccination rates in adult patients; and Increase pneumococcal vaccination rates in appropriate patients based on improvement as an educator, facilitator, and immunizer.
- This question assesses the learner's ability to apply strategies to improve pneumococcal vaccination rates in at-risk adults.
- The ACIP notes that PPSV23 and influenza vaccines may be administered during the same visit. These two vaccines can be concurrently injected into separate arms.

Level 3A, 3B, and 4 Outcomes – *Learning (Declarative and Procedural Knowledge) and Competence*



Correct answer: c.

- 33% of controls were unable to correctly identify a strategy that would be the most likely to improve adult pneumococcal vaccination rates. Though there was an increase in participants' awareness of this information after participating in the educational activity (91%), an important minority of professionals lacked baseline knowledge and competence related to the application of strategies to improve pneumococcal vaccination rates in at-risk adults. As previously stated, pharmacist immunizers are in a prime position to improve immunization rates; thus, future educational programming should focus on the role of pharmacists in improving pneumococcal vaccination rates.

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PeerView INSTITUTE FOR MEDICAL EDUCATION

Audience Generation Plan

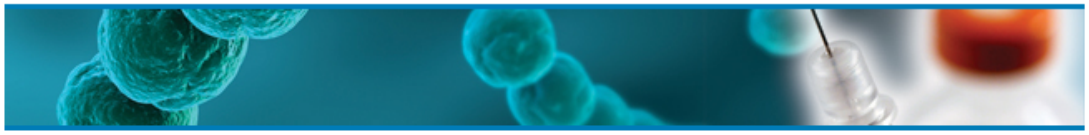
- **5,300 pharmacist have been identified and included in this group**
  - US-based healthcare professionals are invited to over 500 CME activities per year and access 25 on average. As a result, an audience generation plan must be multi-faceted and persistent, but not overbearing.
  - Multi-format, multimedia publicity campaign for each activity component
    - Email
    - Direct Mail
    - Fax
- **Live Webcast**
  - Pharmacists were invited to participate in the live webcast via emails, faxes, and a direct-mail postcard
- **onDemand Enduring**
  - Pharmacists were invited to participate via a multi-format, multimedia recruitment and publicity campaign involving email, fax, a direct-mail postcard, and a direct-mail print monograph
  - Multi-format, multimedia publicity campaign reaches out 12 times over 12 weeks
- **Activity-specific selection criteria**
  - Registered medical specialty
    - Pharmacists
  - Geography: United States
  - Membership in relevant societies
  - Participation in previous PeerView CPE activities on similar topics
  - Readership history on a variety of medical publishing channels (i.e., Doctor's Guide, NTK Watch)
  - Various demographic and practice information
    - Primary practice type
    - Major professional activity

Audience Generation – *Custom Webcast Website*

PeerView Live | Upcoming CPE-certified live webcast for pharmacists and other professionals involved in the prevention of pneumococcal infections

Home | Overview | Agenda | CPE Information | OnDemand Activity | Ask the Faculty | Share Activity | Sign-up for E-Alerts

Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization



Join Dr. Phillip Barkley as he discusses the pharmacist's role in preventing pneumococcal infections through vaccination, and find out how to educate at-risk patients, establish a collaborative model with other medical staff, and overcome barriers to vaccine uptake.

REGISTER NOW FOR THIS LIVE ACTIVITY

Wednesday, April 24, 2013 — 7:30 – 8:30 PM EDT

LIVE ONLINE WEBCAST

Interact with our expert panel from the convenience of your own computer.

The Webcast will show live on this website. Please check here for hardware and software requirements in advance of the Webcast.

LIVE via TELECONFERENCE

Sign-up now to participate in this live webcast from your phone.

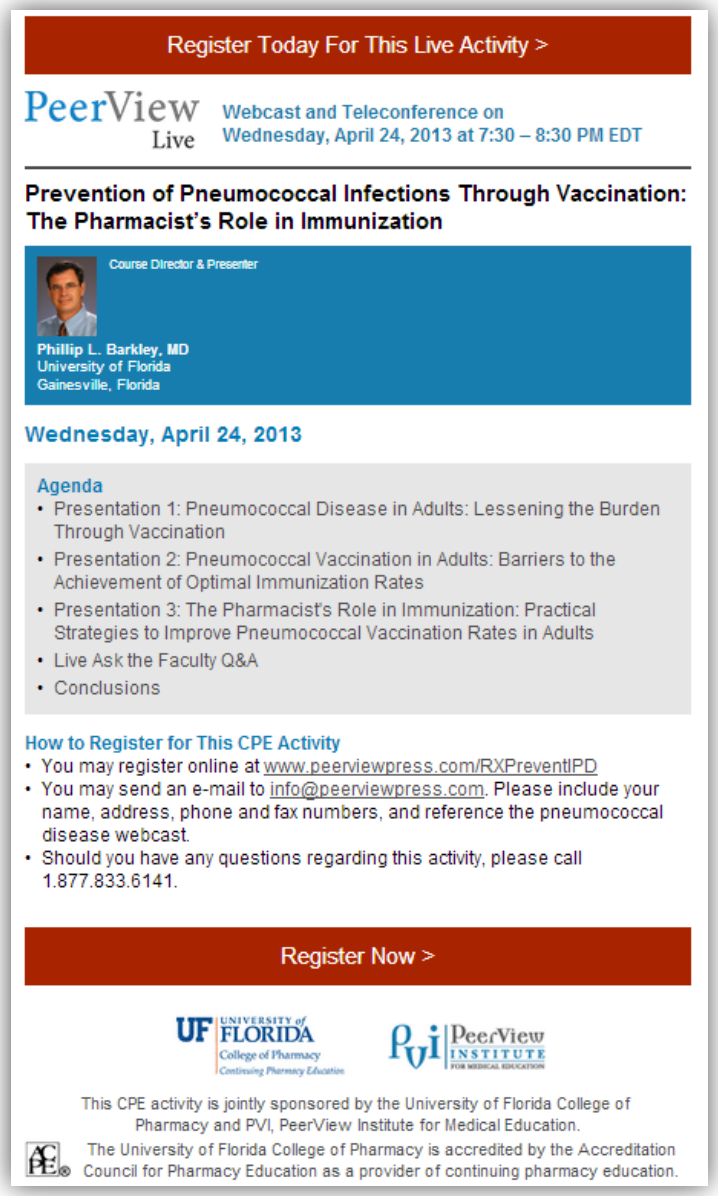
You can listen via our teleconference line.

Unable to attend?
Participate via the OnDemand activity

FACULTY

Course Director & Presenter
Phillip L. Barkley, MD
Director, Student Health Care Center
University of Florida
Gainesville, Florida

Audience Generation – *Webcast publicity*



Register Today For This Live Activity >

PeerView Live

Webcast and Teleconference on
Wednesday, April 24, 2013 at 7:30 – 8:30 PM EDT

Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Course Director & Presenter

Phillip L. Barkley, MD
University of Florida
Gainesville, Florida

Wednesday, April 24, 2013

Agenda

- Presentation 1: Pneumococcal Disease in Adults: Lessening the Burden Through Vaccination
- Presentation 2: Pneumococcal Vaccination in Adults: Barriers to the Achievement of Optimal Immunization Rates
- Presentation 3: The Pharmacist's Role in Immunization: Practical Strategies to Improve Pneumococcal Vaccination Rates in Adults
- Live Ask the Faculty Q&A
- Conclusions

How to Register for This CPE Activity

- You may register online at www.peerviewpress.com/RXPreventIPD
- You may send an e-mail to info@peerviewpress.com. Please include your name, address, phone and fax numbers, and reference the pneumococcal disease webcast.
- Should you have any questions regarding this activity, please call 1.877.833.6141.

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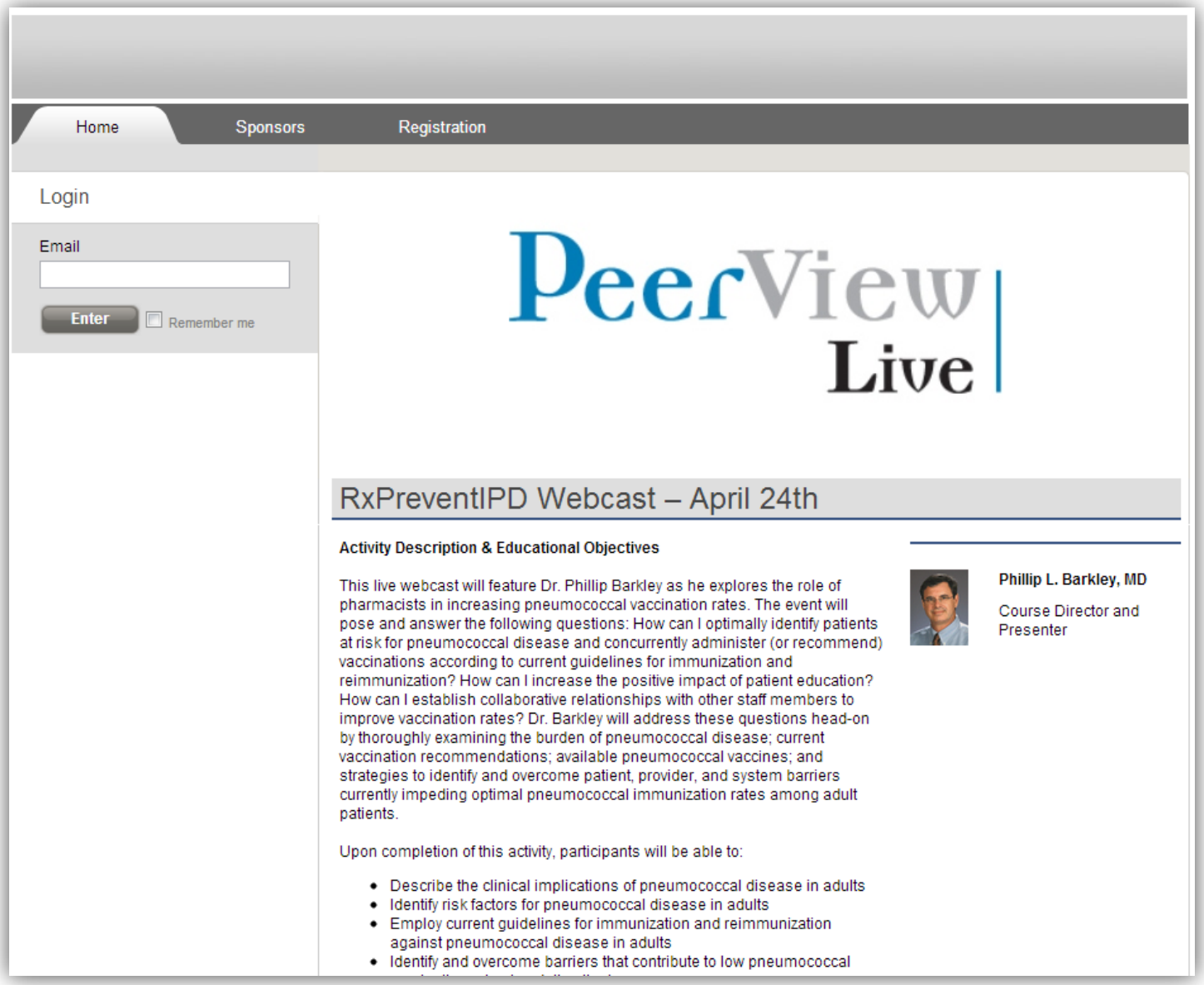
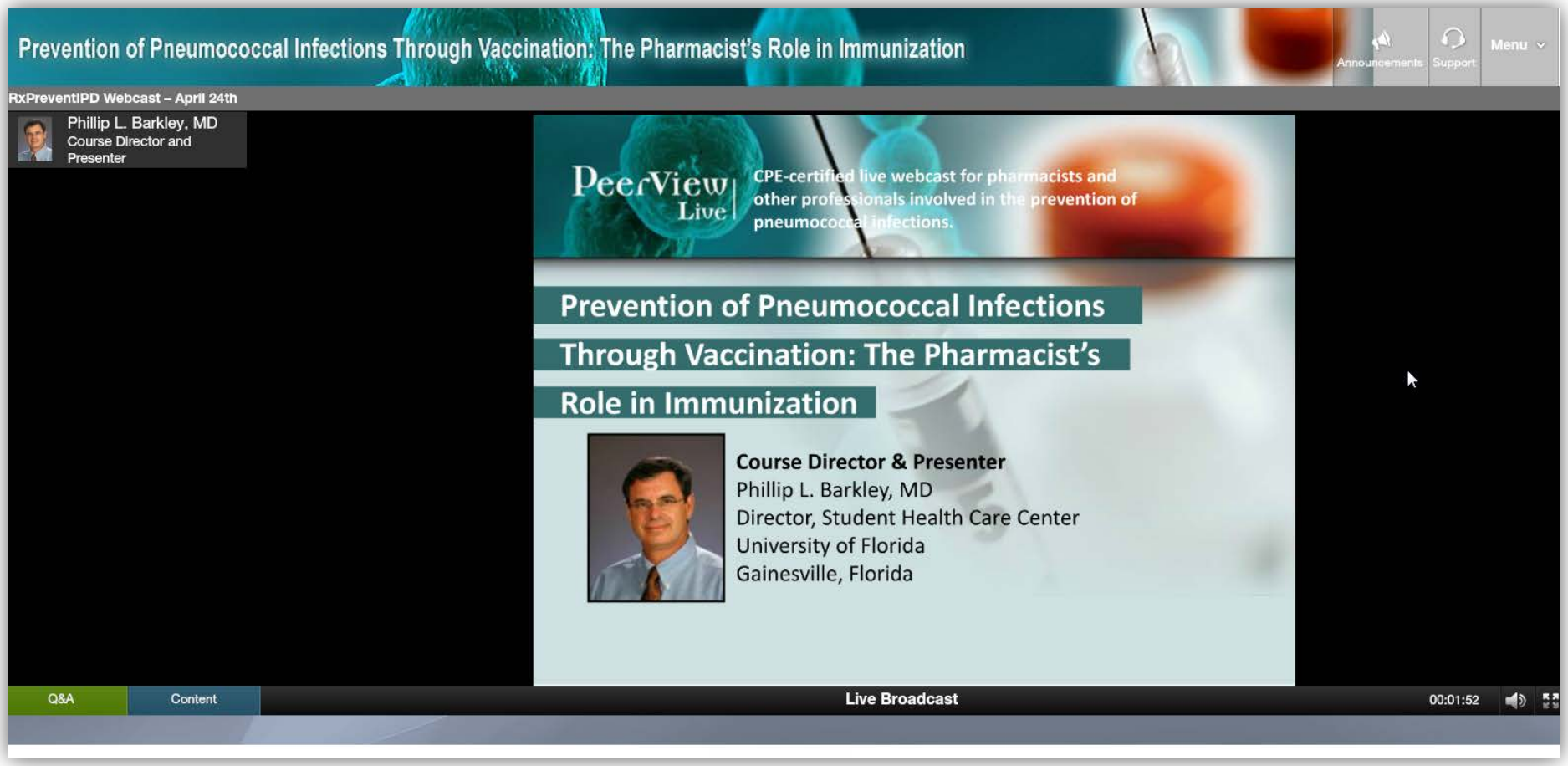


Delivery – *Live Webcast*



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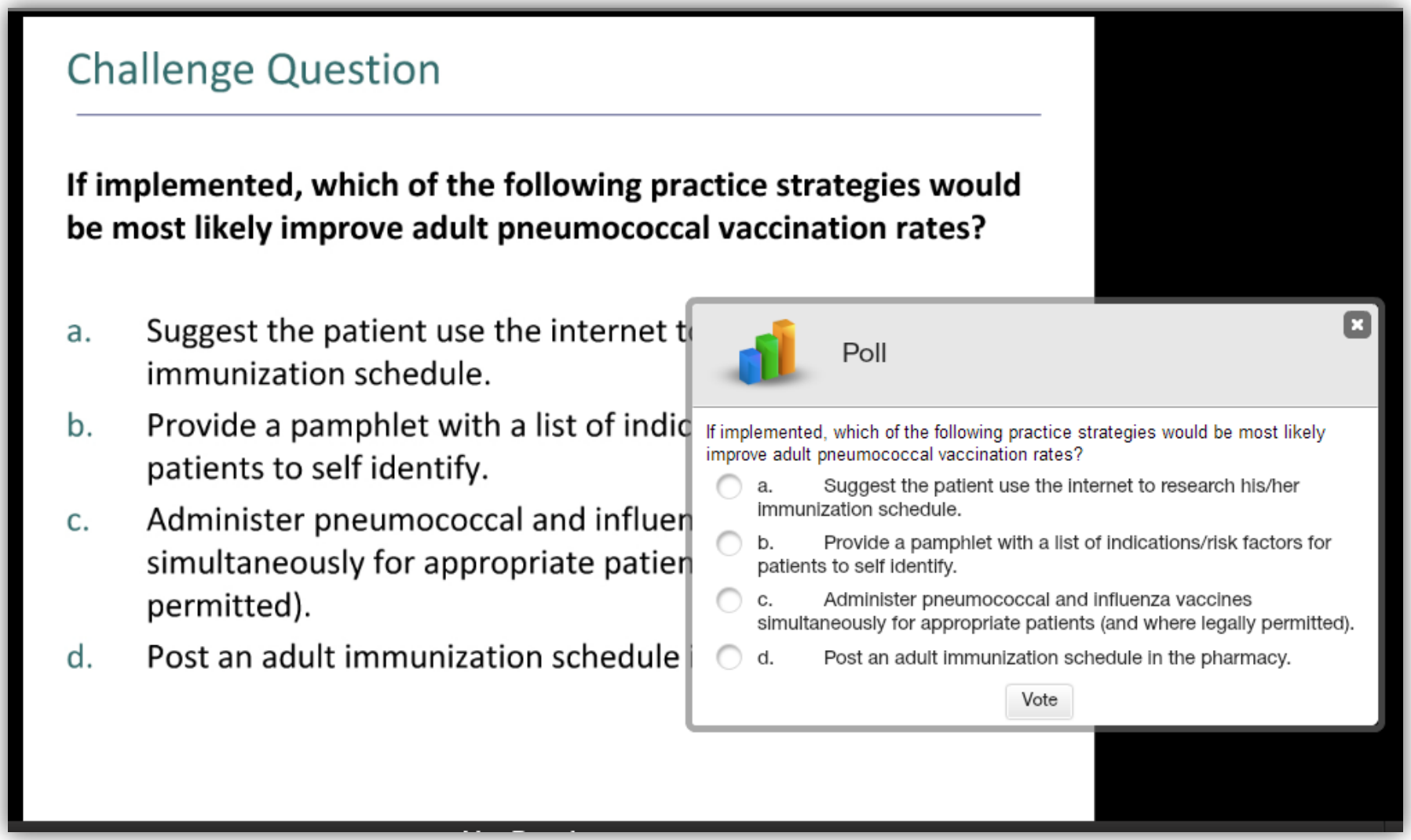
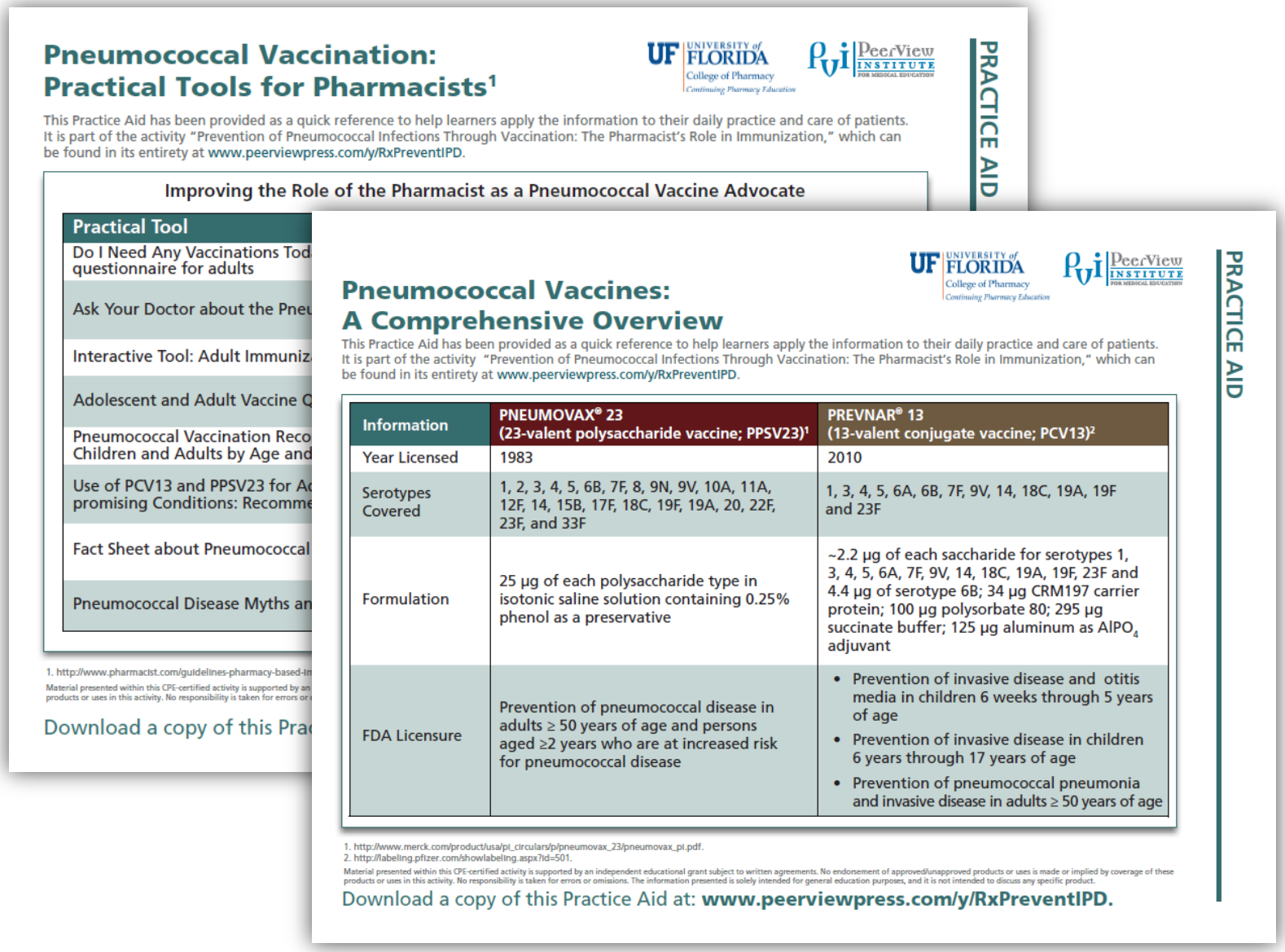


Delivery – *Live and OnDemand Feature: Practice Aids*



Pneumococcal Vaccination: Practical Tools for Pharmacists[1]

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PRACTICE AID

This Practice Aid has been provided as a quick reference to help learners apply the information to their daily practice and care of patients. It is part of the activity "Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization," which can be found in its entirety at www.peerviewpress.com/y/RxPreventIPD.

Improving the Role of the Pharmacist as a Pneumococcal Vaccine Advocate

Practical Tool
Do I Need Any Vaccinations Tod questionnaire for adults
Ask Your Doctor about the Pneu
Interactive Tool: Adult Immuniz
Adolescent and Adult Vaccine Q
Pneumococcal Vaccination Reco Children and Adults by Age and
Use of PCV13 and PPSV23 for Ac promising Conditions: Recomme
Fact Sheet about Pneumococcal
Pneumococcal Disease Myths an

1. http://www.pharmacist.com/guidelines-pharmacy-based-im

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Pneumococcal Vaccines: A Comprehensive Overview

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PRACTICE AID

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Information	PNEUMOVAX® 23 (23-valent polysaccharide vaccine; PPSV23)[1]	PREVNAR® 13 (13-valent conjugate vaccine; PCV13)[2]
Year Licensed	1983	2010
Serotypes Covered	1, 2, 3, 4, 5, 6B, 7F, 8, 9N, 9V, 10A, 11A, 12F, 14, 15B, 17F, 18C, 19F, 19A, 20, 22F, 23F, and 33F	1, 3, 4, 5, 6A, 6B, 7F, 9V, 14, 18C, 19A, 19F and 23F
Formulation	25 µg of each polysaccharide type in isotonic saline solution containing 0.25% phenol as a preservative	~2.2 µg of each saccharide for serotypes 1, 3, 4, 5, 6A, 7F, 9V, 14, 18C, 19A, 19F, 23F and 4.4 µg of serotype 6B; 34 µg CRM197 carrier protein; 100 µg polysorbate 80; 295 µg succinate buffer; 125 µg aluminum as $AlPO_4$ adjuvant
FDA Licensure	Prevention of pneumococcal disease in adults ≥ 50 years of age and persons aged ≥2 years who are at increased risk for pneumococcal disease	• Prevention of invasive disease and otitis media in children 6 weeks through 5 years of age • Prevention of invasive disease in children 6 years through 17 years of age • Prevention of pneumococcal pneumonia and invasive disease in adults ≥ 50 years of age

1. http://www.merck.com/product/usa/pi_circulars/p/pneumovax_23/pneumovax_pi.pdf.
2. http://labeling.pfizer.com/showlabeling.aspx?id=501.

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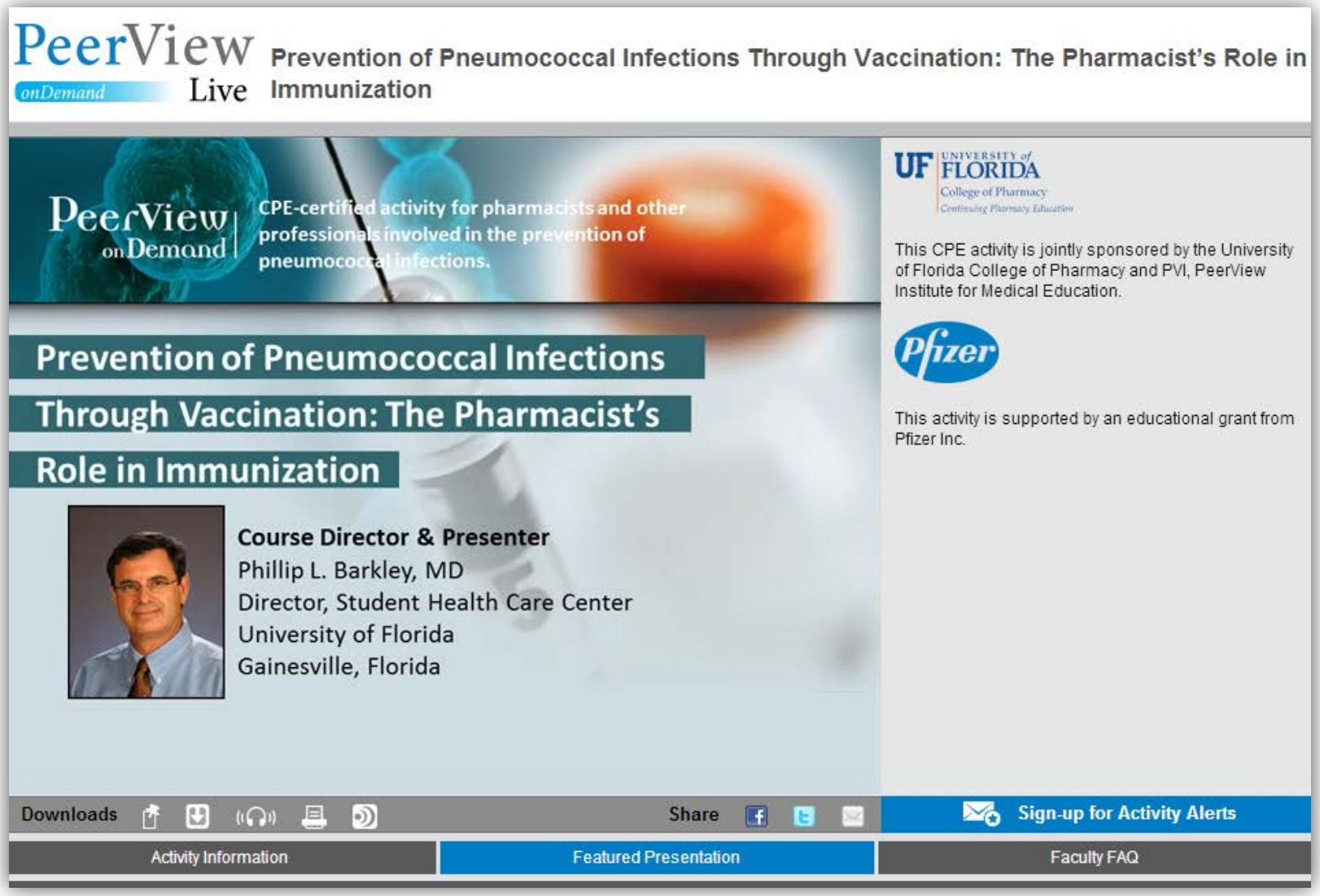
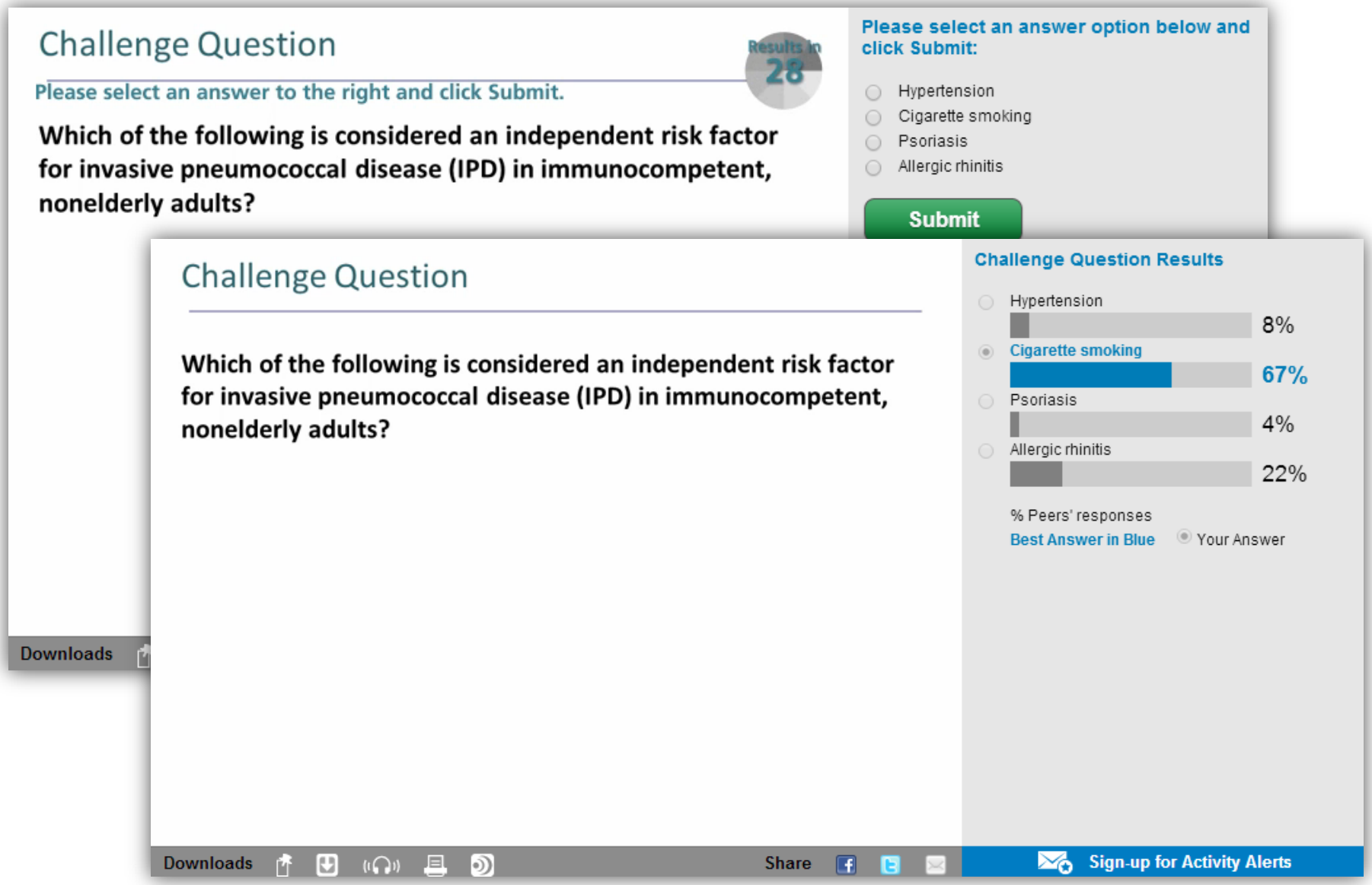


Delivery – *onDemand Online Feature: PeerPolling*



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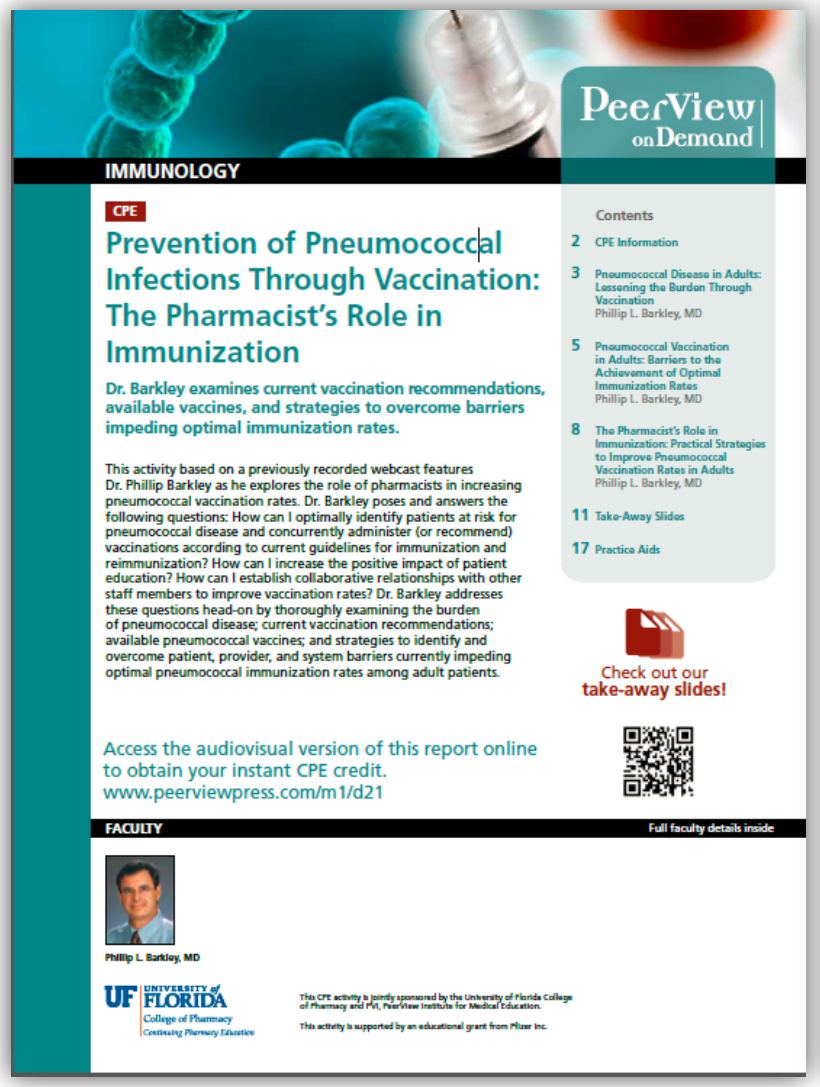

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Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Dr. Barkley examines current vaccination recommendations, available vaccines, and strategies to overcome barriers impeding optimal immunization rates.

This activity based on a previously recorded webcast features Dr. Phillip Barkley as he explores the role of pharmacists in increasing pneumococcal vaccination rates. Dr. Barkley poses and answers the following questions: How can I optimally identify patients at risk for pneumococcal disease and concurrently administer (or recommend) vaccinations according to current guidelines for immunization and reimmunization? How can I increase the positive impact of patient education? How can I establish collaborative relationships with other staff members to improve vaccination rates? Dr. Barkley addresses these questions head-on by thoroughly examining the burden of pneumococcal disease; current vaccination recommendations; available pneumococcal vaccines; and strategies to identify and overcome patient, provider, and system barriers currently impeding optimal pneumococcal immunization rates among adult patients.

Contents

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FACULTY — Full faculty details inside

Phillip L. Barkley, MD

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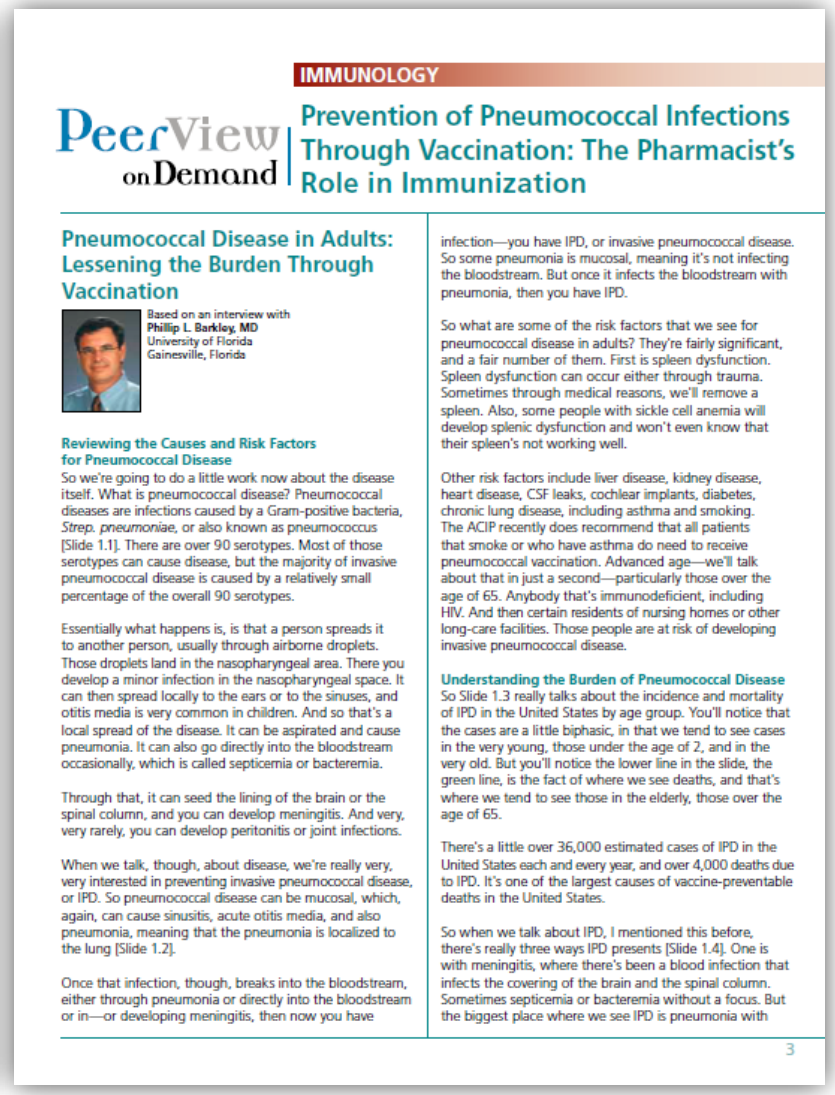

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Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Pneumococcal Disease in Adults: Lessening the Burden Through Vaccination

Based on an interview with
Phillip L. Barkley, MD
University of Florida
Gainesville, Florida

Reviewing the Causes and Risk Factors for Pneumococcal Disease

So we're going to do a little work now about the disease itself. What is pneumococcal disease? Pneumococcal diseases are infections caused by a Gram-positive bacteria, *Strep. pneumoniae*, or also known as pneumococcus [Slide 1.1]. There are over 90 serotypes. Most of those serotypes can cause disease, but the majority of invasive pneumococcal disease is caused by a relatively small percentage of the overall 90 serotypes.

Essentially what happens is, is that a person spreads it to another person, usually through airborne droplets. Those droplets land in the nasopharyngeal area. There you develop a minor infection in the nasopharyngeal space. It can then spread locally to the ears or to the sinuses, and otitis media is very common in children. And so that's a local spread of the disease. It can be aspirated and cause pneumonia. It can also go directly into the bloodstream occasionally, which is called septicemia or bacteremia.

Through that, it can seed the lining of the brain or the spinal column, and you can develop meningitis. And very, very rarely, you can develop peritonitis or joint infections.

When we talk, though, about disease, we're really very, very interested in preventing invasive pneumococcal disease, or IPD. So pneumococcal disease can be mucosal, which, again, can cause sinusitis, acute otitis media, and also pneumonia, meaning that the pneumonia is localized to the lung [Slide 1.2].

Once that infection, though, breaks into the bloodstream, either through pneumonia or directly into the bloodstream or in—or developing meningitis, then now you have infection—you have IPD, or invasive pneumococcal disease. So some pneumonia is mucosal, meaning it's not infecting the bloodstream. But once it infects the bloodstream with pneumonia, then you have IPD.

So what are some of the risk factors that we see for pneumococcal disease in adults? They're fairly significant, and a fair number of them. First is spleen dysfunction. Spleen dysfunction can occur either through trauma. Sometimes through medical reasons, we'll remove a spleen. Also, some people with sickle cell anemia will develop splenic dysfunction and won't even know that their spleen's not working well.

Other risk factors include liver disease, kidney disease, heart disease, CSF leaks, cochlear implants, diabetes, chronic lung disease, including asthma and smoking. The ACIP recently does recommend that all patients that smoke or who have asthma do need to receive pneumococcal vaccination. Advanced age—we'll talk about that in just a second—particularly those over the age of 65. Anybody that's immunodeficient, including HIV. And then certain residents of nursing homes or other long-care facilities. Those people are at risk of developing invasive pneumococcal disease.

Understanding the Burden of Pneumococcal Disease

So Slide 1.3 really talks about the incidence and mortality of IPD in the United States by age group. You'll notice that the cases are a little biphasic, in that we tend to see cases in the very young, those under the age of 2, and in the very old. But you'll notice the lower line in the slide, the green line, is the fact of where we see deaths, and that's where we tend to see those in the elderly, those over the age of 65.

There's a little over 36,000 estimated cases of IPD in the United States each and every year, and over 4,000 deaths due to IPD. It's one of the largest causes of vaccine-preventable deaths in the United States.

So when we talk about IPD, I mentioned this before, there's really three ways IPD presents [Slide 1.4]. One is with meningitis, where there's been a blood infection that infects the covering of the brain and the spinal column. Sometimes septicemia or bacteremia without a focus. But the biggest place where we see IPD is pneumonia with

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Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Dr. Barkley examines current vaccination recommendations, available vaccines, and strategies to overcome barriers impeding optimal immunization rates.

Interview With the Expert

Phillip L. Barkley, MD
University of Florida
Gainesville, Florida

Educational Objectives:

Upon completion of this activity, participants will be able to:

- Describe the clinical implications of pneumococcal disease in adults
- Identify risk factors for pneumococcal disease in adults
- Employ current guidelines for immunization and reimmunization against pneumococcal disease in adults
- Identify and overcome barriers that contribute to low pneumococcal vaccination rates in adult patients
- Discuss the efficacy and safety of available pneumococcal vaccines for adults
- Increase pneumococcal vaccination rates in appropriate patients based on improvement as an educator, facilitator, and immunizer

Go online now to participate in this activity
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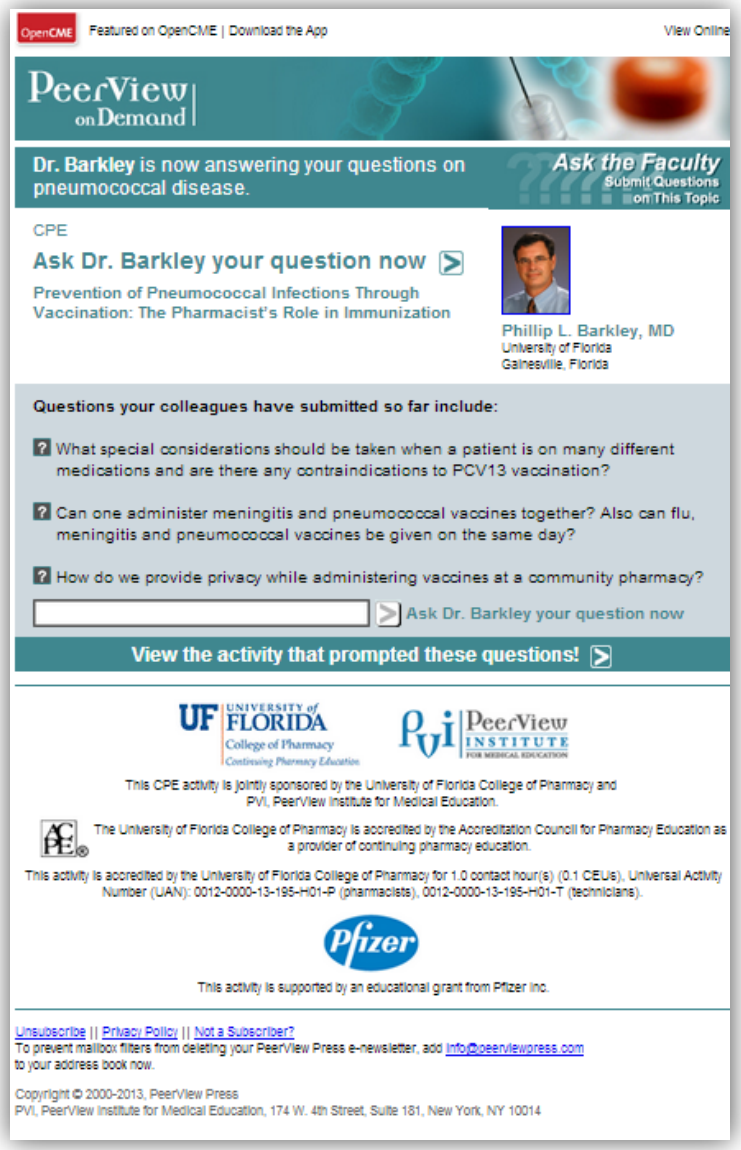

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Dr. Barkley is now answering your questions on pneumococcal disease.

Ask the Faculty Submit Questions on This Topic

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Ask Dr. Barkley your question now

Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Phillip L. Barkley, MD
University of Florida
Gainesville, Florida

Questions your colleagues have submitted so far include:

- What special considerations should be taken when a patient is on many different medications and are there any contraindications to PCV13 vaccination?
- Can one administer meningitis and pneumococcal vaccines together? Also can flu, meningitis and pneumococcal vaccines be given on the same day?
- How do we provide privacy while administering vaccines at a community pharmacy?

Ask Dr. Barkley your question now

View the activity that prompted these questions!

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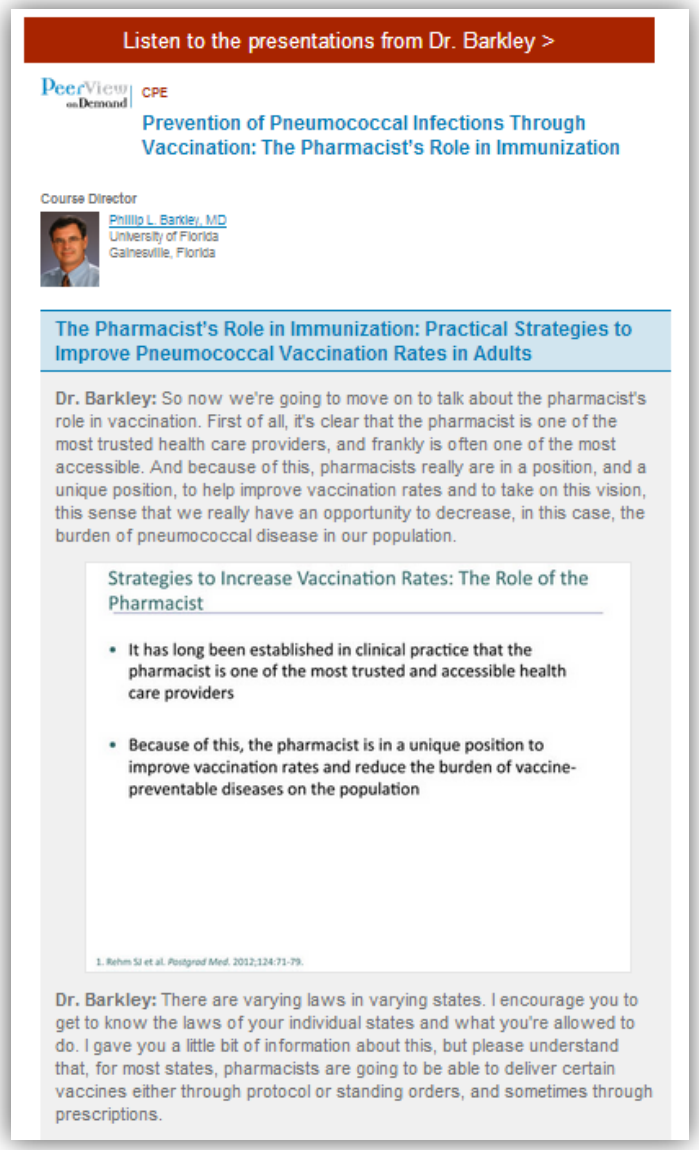

Listen to the presentations from Dr. Barkley >

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Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

Course Director

Phillip L. Barkley, MD
University of Florida
Gainesville, Florida

The Pharmacist's Role in Immunization: Practical Strategies to Improve Pneumococcal Vaccination Rates in Adults

Dr. Barkley: So now we're going to move on to talk about the pharmacist's role in vaccination. First of all, it's clear that the pharmacist is one of the most trusted health care providers, and frankly is often one of the most accessible. And because of this, pharmacists really are in a position, and a unique position, to help improve vaccination rates and to take on this vision, this sense that we really have an opportunity to decrease, in this case, the burden of pneumococcal disease in our population.

Strategies to Increase Vaccination Rates: The Role of the Pharmacist

- It has long been established in clinical practice that the pharmacist is one of the most trusted and accessible health care providers
- Because of this, the pharmacist is in a unique position to improve vaccination rates and reduce the burden of vaccine-preventable diseases on the population

1. Rehm SJ et al. *Postgrad Med.* 2012;124:71-79.

Dr. Barkley: There are varying laws in varying states. I encourage you to get to know the laws of your individual states and what you're allowed to do. I gave you a little bit of information about this, but please understand that, for most states, pharmacists are going to be able to deliver certain vaccines either through protocol or standing orders, and sometimes through prescriptions.

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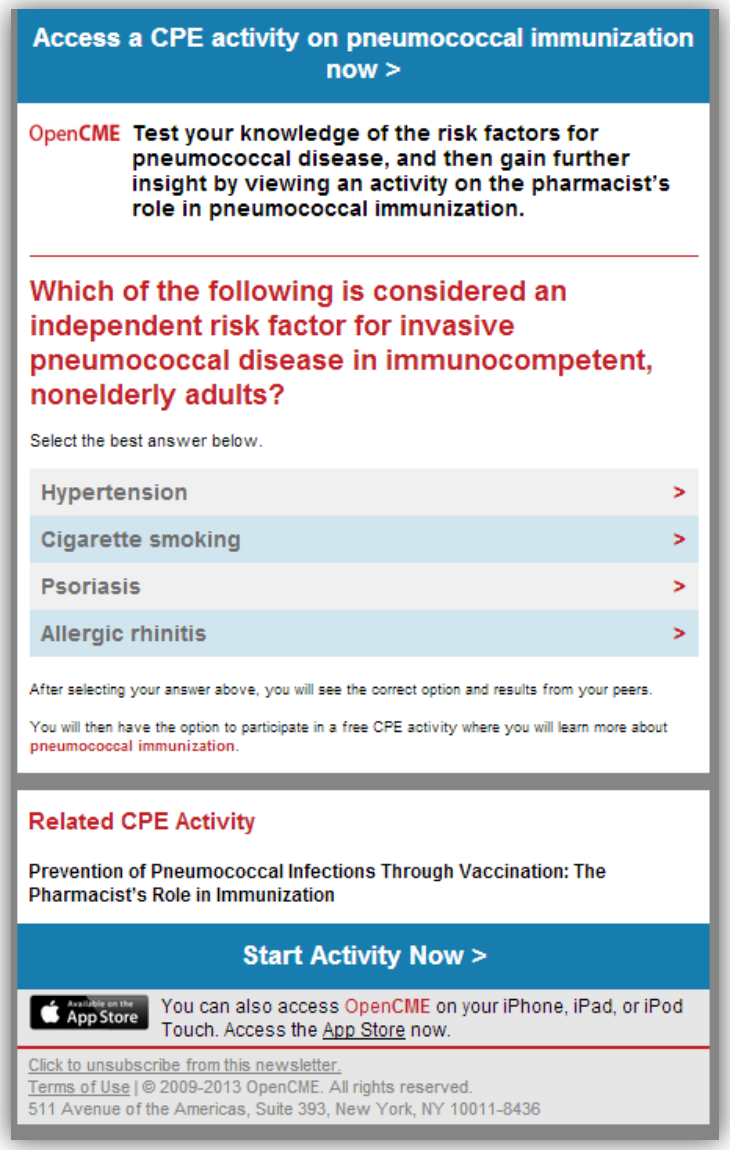

Access a CPE activity on pneumococcal immunization now >

OpenCME **Test your knowledge of the risk factors for pneumococcal disease, and then gain further insight by viewing an activity on the pharmacist's role in pneumococcal immunization.**

Which of the following is considered an independent risk factor for invasive pneumococcal disease in immunocompetent, nonelderly adults?

Select the best answer below.

- Hypertension >
- Cigarette smoking >
- Psoriasis >
- Allergic rhinitis >

After selecting your answer above, you will see the correct option and results from your peers.

You will then have the option to participate in a free CPE activity where you will learn more about pneumococcal immunization.

Related CPE Activity

Prevention of Pneumococcal Infections Through Vaccination: The Pharmacist's Role in Immunization

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Thank You!