Disparities in Adult Pneumococcal Vaccination Pfizer Independent Grant for Learning and Change LOI 2015

- A. **Title:** Enhanced Academic Detailing: Piloting a Prototype to Increase Rural Older Adult Pneumococcal Immunization Rates
- B. **Program Goal**: to increase pneumococcal immunization rates among rural older adult residents in Whitman County (WC) through the development and piloting of reproducible, enhanced academic detailing (AD) for health-care providers (HCPs) in community clinics and pharmacies. This program aligns with Washington State University (WSU) land-grant mission to provide health care in rural and underserved areas, the College of Pharmacy, Nursing and Medicine's expertise, the campus focus to embrace interdisciplinary learning and practice-change models and Pfizer's quest to improve vaccination disparities in high-risk patient populations and fund innovative research to ultimately improve health outcomes.

C. Objectives:

- <u>Assess barriers to vaccinating adults</u> (≥ 65) in community clinics and rural pharmacies in Whitman County, Washington
- 2. <u>Develop an enhanced academic-detailing model</u> with the potential to address pneumococcal immunization in older (\geq 65) adults across the continuum of needs
- 3. <u>Increase pneumococcal immunization rates</u> in rural-dwelling older (≥ 65) adults by changing healthcare providers' vaccination practices

These objectives will promote <u>best practices of older adult immunization</u> in WC. <u>Objective 1</u> will yield an understanding of barriers to immunizing older adults that are specific to this county; yet are applicable to rural areas across the Inland Northwest. <u>Objective 2</u> will yield a model for implementing an intervention to update HCP knowledge and build an infrastructure for older adult immunizations that is reproducible, multifaceted, and interdisciplinary. These practice changes should accomplish <u>Objective 3</u>, to increase pneumococcal immunization rates. Collectively, these outcomes will establish our concept – <u>enhanced academic detailing – as an approach that affects sustainable practice change.</u>

D. Needs Assessment:

Data from 2012 CDC phone survey revealed that only 36.5% of adults in Spokane County and <u>28.12% of adults in more rural Whitman County</u> (one of lowest rates in State) reported ever receiving <u>pneumococcal vaccination.</u>¹ It is estimated that there are 46,606 people living in WC with over 4,500 people 65 and older.² In 2006-2008 less than 70% of these seniors reported ever receiving a pneumonia shot, which was predominantly the 23-valent pneumococcal vaccine (PPSV23).³ Shannon Hatley RN (WC Public Health; personal communication, April 16, 2014) states that only one practice in entire county ordered 13valent pneumococcal conjugate vaccine (PCV13) and was "using it sporadically." We estimate that **PCV13 vaccination rates in older adults in WC** is currently **less than 10%.**

To our knowledge an assessment identifying barriers to pneumococcal vaccination has not been conducted WC. This <u>project should directly impact HCPs (pharmacists and</u> <u>physicians) in WC</u>, by first assessing and then lessening these barriers, such as: low knowledge and education gaps of HCPs (leading to giving little or no vaccine information or recommendation), and lack of awareness of benefits of, professional apathy to, and failure to assume responsibility for vaccination.^{4,5} Adding to these knowledge gaps are recent CDC recommendations to vaccinate older adults with both PCV13 and PPSV23.^{6,7} Interventions impacting these <u>provider gaps in knowledge</u> could make a positive impact on vaccination rates. In addition, helping HCPs create <u>system-wide change to their pneumococcal</u> <u>vaccination approach</u> could also enhance rates.

In WC there are approximately 18 medical clinics and 12 community pharmacies, ranging in location, population served, size, and type of practice. We intend to enroll 6 medical clinics and 6 pharmacy sites, recruiting 3 larger volume and 3 lower volume clinics and pharmacies. Within this group, 4 medical and 4 pharmacy sites will be assigned as an intervention site and 2 medical and 2 pharmacy sites (matched controls).

E. Program Design and Methods:

Year 1: Training and Development (Fall 2015- Summer 2016)

- Create a HCP team including 2 WSU College of Pharmacy faculty, 1 WSU College of Nursing faculty, 1 University of Washington Medical School faculty, and student interns from each institution. Faculty will attend training on academic detailing in Boston
- Recruit medical clinics and pharmacies who will participate in academic detailing (AD).
- Collect baseline (2014-2015) immunization data from participating clinics, pharmacies.
- Develop Pre-AD Survey to assess general knowledge and vaccination barriers.
- **Detailing 1:** site visit to build collaborative relationships; administer Pre-AD Survey.
- Create AD presentation and discussion regarding adult pneumococcal vaccination schedule, immunization resources, and screening, administration and education.

Year 2: Academic Detailing and Implementation of Change (Fall 2016- Summer 2017)

- Collect 2015-2016 immunization data from participating clinics and pharmacies.
- **Detailing 2:** Conduct an introductory AD to assess perceived vaccination barriers. Determine need for future assistance to improve immunization rates.
- Utilize information to tailor educational materials to each site with the aim of decreasing vaccination barrier and increasing immunization rates.
- **Detailing 3:** Provide tailored educational materials and assist with implementation.
- Design formative evaluation to assess implementation barriers of suggested changes.
- **Detailing 4:** Conduct formative evaluation; discuss effect of and issues with AD.

Year 3: Final Data Collection and Analysis (Fall 2017- Winter 2018)

- **Detailing 5:** Conduct Post-AD survey to assess sustainability and change.
- Collect 2016-2017 immunization data from participating clinics and pharmacies.
- Evaluate students' experience, including impact on future success in chosen profession.
- Aggregate (clinics, pharmacies) and analyze immunization and survey data.
- Create and submit final report.

F. Innovation

Originality: Academic detailing has been utilized for 30 years, especially in areas of diabetes and mental health.^{8, 9} Impact assessment on changing adult immunization practices within rural settings is limited.^{8, 10, 11} In addition, the effectiveness of evidence-based information sharing, plus assessment of barriers and assistance implementing policy change and collaborative practice agreements, with a multi-disciplinary team, has not been undertaken. The project hopes to expand the experience with and publish findings of this approach. **Building upon**: This project will utilize the strengths of our well-established interdisciplinary educational approach and partnerships within our health-sciences campus, collaborative

practice agreements and progressive pharmacy practice act within Washington State, and investigator's experience with ambulatory care practice sites, geriatrics, immunization practice delivery, vaccination barriers, practice-change, and education and training of HCPs.

G. Design of Outcomes Evaluation **Data Collection:**

- 1. Pre-Academic Detailing Survey: assess vaccination barriers and immunization screening practices, satisfaction with current practices, number of patients vaccinated annually
- 2. Formative Evaluation Discussion: Between Detailing 3 and Detailing 4, a formative evaluation will address challenges to creating sustainable practice changes. Detailing 4 will focus on determining what additional barriers have arisen during implementation.
- 3. Post-Academic Detailing Survey: Pre-AD survey will be reformatted as our Post AD Survey during Detailing 5. Pre and post surveys results will be aggregated and comparatively analyzed (to controls). This data will be used to determine practice change created by AD presentations and benefit derived by targeted audience.
- 4. Collection of Immunization Data: Pneumococcal immunization rates (both PPSV23 and PCV13) for each site will be collected annually beginning with 2014-2015. Given that academic detailing will include both provider and system-based approaches, the PCV13 vaccination rate in older adults in Whitman County is expected to increase to 50%.
- 5. Essay from Students Participating in Academic Detailing: Medical, pharmacy and nursing students will write an essay expounding experiences and describing the perceived impact that academic detailing will have on their future practices. These will not be formally analyzed, but rather will provide a final summary to the research team.

Data Analysis:

The Pre and Post AD Surveys (data collected as categorical and continuous variables) will be analyzed for changes in vaccination barriers. Pre and post pneumococcal immunization rates (i.e. <10% to 50%) will be analyzed as a whole for intervention sites and as subgroups (pharmacy, clinic, control, and intervention), which will include the matched control sites. For the final report and dissemination, descriptive analyses will summarize vaccine barrier/survey data. Categorical data will be reported as frequencies, and continuous variables as means with standard deviations. To compare changes in the mean rate of immunization rate, analysis of variance (ANOVA) will be conducted. All analyzes will be done using SPSS software. An alpha error rate of 0.05 will be the threshold for statistical significance, and inferential results will be presented as point estimates with 95% confidence intervals.

Engagement:

• Target audience is health-care providers. Key assessment: post AD survey **Dissemination:**

- Presentations at state, regional, and/or national pharmacy meetings
- Manuscript submissions to journals, such as American Journal of Preventative Medicine, Public Health, Pharmaceutical Education, and/or BMC Medical Education.

H. Project Timeline

Fall 2015 through Winter 2018 (see Program Design and Methods section for details)

References

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