

Summit National Award Winners

Adult Immunization Publication Award

Recipient: **University of Pittsburgh Vaccine Research Group (PittVax)**



Presentation by:
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National Adult
and Influenza
Immunization
Summit

THE 4 PILLARS™ PRACTICE TRANSFORMATION PROGRAM



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The 4 Pillars™ Research Team



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The 4 Pillars™ Practice Transformation Program - History

- Based on 2 decades of health services research
- Tested successfully with pediatric flu, adult immunizations, adolescent immunizations
- Transformed from paper-based to web-based program

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Evidence Base for Increasing Immunizations

- Community Preventive Services Task Force
 - Improving vaccination uptake requires behavior changes at the system, provider, support staff, and patient levels.
- Strategies should:
 - Increase demand
 - Improve access
 - Encourage providers to regularly administer vaccines

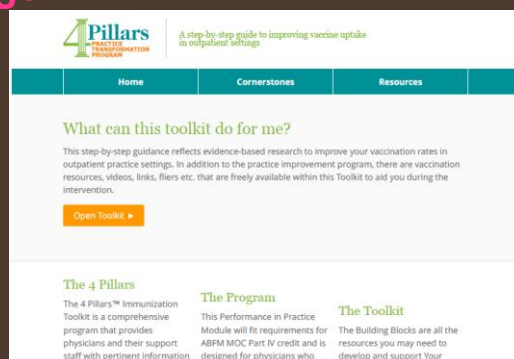
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Evidence Base for Increasing Immunizations

- Sustainable change requires a coordinated, multi-pronged, adaptable approach.
- A successful practice improvement program will support change in diverse practice cultures.
- Motivation is a necessary component.

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The 4 Pillars™ Practice Transformation Program Home Page



The screenshot shows the home page of the 4 Pillars Practice Transformation Program. At the top left is the logo for '4 Pillars Practice Transformation Program'. To its right is a tagline: 'A step-by-step guide to improving vaccine uptake in outpatient settings'. Below the logo and tagline is a navigation bar with three tabs: 'Home', 'Cornerstones', and 'Resources'. The main content area features a heading 'What can this toolkit do for me?' followed by a paragraph of text explaining the program's purpose and a button labeled 'Open Toolkit'. At the bottom, there are three columns of text: 'The 4 Pillars', 'The Program', and 'The Toolkit', each with a brief description of its components.

www.4pillarstransformation.pitt.edu

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The 4 Pillars™ Program includes:

- ▣ Background materials
- ▣ 4 Pillars strategies
 - Convenience and Easy Access
 - Patient Communication
 - Enhanced Office Systems
 - Motivation by an Office Champion
- ▣ Case studies and best practices
- ▣ Resources
- ▣ Links to SOPs and other high quality immunization sites

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The 4 Pillars™ Program helps practices to:

- Select strategies
- Organize roll out of strategies
- Access resources
- Track progress

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Research on the 4 Pillars™ Practice Transformation Program

- ▣ RCCT and Pre-post studies in adults and adolescents
- ▣ Mixed methods study in adult practices
- ▣ Cost effectiveness of 4 Pillars Program in adults

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Adult Results

- Over 70,000 adult patients with at least one visit in each of 3 years
- 24 practices completed study – 2 cities
- Diverse patient populations
- Increases in PPSV of 12-15 percentage points
- Increases in PCV of 3-12 percentage points
- Increases in Influenza vaccine of 3-6 percentage points
- Increases in Tdap vaccine of 6-8 percentage points

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Mixed Methods

Aim:

- Determine practices' readiness to implement the 4 Pillars™ Program

Methods:

- Interview staff about program
- Identify 4 practice characteristics
 - Degree of QI history
 - Communication and practice leadership
 - Immunization Champion leadership effectiveness
 - Organizational flexibility

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Mixed Methods Results

- Score practices based on characteristics and group them by total scores
 - Low implementers had smallest changes in vaccination rates (3 percentage points)
 - High implementers had largest changes in vaccination rates (9 percentage points)

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Lessons Learned

- Change is best if self-driven
- Time constraints require creativity to prioritize project
- Insufficient empowerment of Immunization Champions
- Delayed feedback
- Incomplete adoption of SOPs

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Evolution of the 4 Pillars™ Program

- Changed the nature and number of introductory steps to increase engagement of the practice
- Increased leadership role of Immunization Champion
- Decreased the time to receive feedback and encouraged self- measurements of progress
- Shared ideas across sites
- Decreased barriers to using the website



4 Pillars™ Publications – 2014 and 2015

- Nowalk, MP, Nolan, BA, Nutini, J, Ahmed, F, Albert, SM, Susick, M, Zimmerman, RK. Success of the 4 pillars toolkit for influenza and pneumococcal vaccination in adults. *Journal for Healthcare Quality*, 2014; 36(6):5-15.
- Zimmerman RK, Nowalk MP, Lin CJ, Hannibal K, Moehling KK, Huang HH, Matambanadzo A, Troy J, Allred NJ, Gallik G, Reis EC. Cluster randomized trial of a toolkit and early vaccine delivery to improve childhood influenza vaccination rates in primary care. *Vaccine*. 2014 Jun 17;32(29):3656-63.
- Lin CJ, Nowalk MP, Zimmerman RK, Moehling KK, Conti T, Allred NJ, Reis EC. Reducing Racial Disparities in Influenza Vaccination Among Children With Asthma. *J Pediatr Health Care*. 2016 May-Jun;30(3):208-15.

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4 Pillars™ Publications - 2016

- Smith KJ, Zimmerman RK, Nowalk MP, & Lin CJ. Cost-Effectiveness of the 4 Pillars Practice Transformation Program to Improve Vaccination of Adults Aged 65 and Older. *Journal of the American Geriatrics Society*, 2016; 65(4):763-768.
- Nowalk MP, Zimmerman RK, Lin CJ, Reis EC, Huang HH, Moehling KK, Hannibal KM, Matambanadzo A, Shenouda EM, Allred NJ. Maintenance of Increased Childhood Influenza Vaccination Rates 1 Year After an Intervention in Primary Care Practices. *Acad Pediatr*. 2016 Jan-Feb;16(1):57-63.
- Lin CJ, Nowalk MP, Pavlik VN, Brown AE, Zhang S, Raviotta JM, Moehling KK, Hawk M, Ricci EM, Middleton DB, Patel S, South-Paul JE, Zimmerman RK. Using the 4 pillars™ practice transformation program to increase adult influenza vaccination and reduce missed opportunities in a randomized cluster trial. *BMC Infectious Diseases*, 2016; 16(1), 623.

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4 Pillars™ Publications - 2017

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- Zimmerman RK, Brown AE, Pavlik VN, Moehling KK, Raviotta JM, Lin CJ, Zhang S, Hawk M, Kyle S, Patel S, Ahmed F, Nowalk MP. Using the 4 Pillars Practice Transformation Program to Increase Pneumococcal Immunizations for Older Adults: A Cluster-Randomized Trial. *Journal of the American Geriatrics Society*, 2017; 65(1), 114-122.