Cleveland Clinic

A. COVER PAGE

Improving Adult Vaccination Practices in an Academic Primary Care Quality Alliance: A Focus on Influenza and Vaccine-Preventable Pneumonia

Accredited Provider:

The Cleveland Clinic Center for Continuing Education
9500 Euclid Avenue, KK31
Cleveland, OH 44195
Contact: Steven Kawczak, PhD

Educational Collaborators:

The Cleveland Clinic Community Physician Partnership Quality Alliance
6000 W Creek Road
Suite 10, RC 25
Independence, OH 44131
Contact: Tarek Elsawy, MD, FACP

The Academy for Continued Healthcare Learning
1 N. Franklin, Ste 1225
Chicago, IL 60606
Contact: Lisa Keckich, MS

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C. MAIN SECTION OF PROPOSAL

1. Overall Goal & Objectives

In order to reduce the risk of outbreaks, serious illness, hospitalization, and death, as well as reduce direct medical costs of adult patients with influenza or pneumonia, the proposed goals of this program are:

1) Implement system-based tools to identify and immunize at-risk adults for influenza and pneumococcal disease
2) Increase vaccination rates for influenza and pneumococcal disease 10% over baseline in adults seen in Quality Alliance (QA)employee and affiliated primary care practices in Northeast Ohio and surrounding areas
3) Extrapolate learning's from the regional level activity and disseminate to a wider national audience via publication of toolkit designed to improve the quality of adult vaccination practices

2. Technical Approach

OVERVIEW OF ROLES & RESPONSIBILITIES		
Community Physician Partnership	**ACHL**	**Cleveland Clinic Center for Continuing Education**
• Review goals and objectives to align with Cleveland Clinic Quality Alliance mission • Approve measures that align with Cleveland Clinic Quality Alliance performance targets • Release registry data of participating physician learners for Stage A (baseline), as well as for control group • Facilitate physician recruitment and outreach	• Manage faculty recruitment • Coordinate faculty planning calls • Create physician recruitment materials • Support physician recruitment efforts • Collaborate with biostatistician on data collection practices • Work with Community Physician Partnership on data collection (extraction from registry) • Create best practices for physician participation • Oversee development of web-based learner portal • Submit application to ABIM for AQI Pathway approval for MOC	• Oversee planning and documentation • Oversee faculty selection/ COI resolution management
• Review Stage A data	• Post online portal training tutorial	• Review and approve Stage A collection data

OVERVIEW OF ROLES & RESPONSIBILITIES		
Community Physician Partnership	**ACHL**	**Cleveland Clinic Center for Continuing Education**
	• Perform data mining and analyses of Stage A data • Assist faculty with content development for online Stage B/intervention	points and processes
• Review online curriculum for Stage B intervention	• Facilitate creation of individualized online curriculum based on designated learner profiles • Assist faculty in preparation of educational materials	• Review and approve all faculty developed content for Stage B/intervention • Oversee online activity evaluation processes
• Release registry data of participating physician learners for Stage C, as well as for control group • Review Stage C data	• Work with Community Physician Partnership on data collection (extraction from their registry) • Perform data mining and analyses of Stage C data	• Review and approve Stage C data collection processes
• Promote published organizational framework/ tool box to physician members and other Cleveland Clinic affiliates nationwide	• Work with biostatistician on data analyses/ outcomes evaluation • Support faculty with manuscript writing (copyediting, permissions, etc.) • Manage submission of paper with peer-reviewed journal	• Oversee outcomes analyses • Provide final report to grantor

a. Current Assessment of Need in Target Area

Practice Gap: The burden of influenza and pneumococcal disease morbidity and mortality is high, particularly in the elderly and high-risk groups.

- Although vaccines are among the most cost-effective preventive services, approximately 50,000 adults in the U.S. die each year of vaccine-preventable diseases or associated complications.[1]
- Respiratory infections, such as pneumonia and influenza, are the eighth leading cause of death in the U.S.[2] Further, influenza results in over 200,000 hospitalizations and 36,000 deaths annually.[2]

- The state of Ohio ranked 28th in the U.S. for deaths due to pneumonia and influenza in 2010 with 14.6 deaths per 100,000.[3]
- The incidence of pneumococcal disease in the U.S. is 12.9 cases per 100,000 with rates highest in adults over the age of 65 years (37.0 cases per 100,000).[4]
- The burden of influenza and pneumococcal disease are generally higher in the elderly and high-risk groups. For example, patients ≥65 years old with pneumococcal disease have more serious disease and medical costs due to hospitalization than younger adults.[5]
- Adult immunization rates in Ohio are low despite government-established goals for pneumococcal and seasonal influenza vaccination rates in the *Healthy People: 2020* report.[2]

Practice Gap: There are missed opportunities for seasonal influenza vaccination and the gap between target levels and vaccination rates persists despite national awareness campaigns.

- The Advisory Committee on Immunization Practices (ACIP) recommends vaccination against seasonal influenza for all over the age of 6 months.
    - Seasonal flu vaccines typically protect against the three influenza viruses (trivalent) estimated to be most common; however, a quadrivalent vaccine became available for the 2013-2014 season.[6] A cell-based influenza vaccine was also recently approved for patients with severe egg allergy.
- Data from the 2011 Behavioral Risk Factor Surveillance System (BRFSS) indicate that only 61% of older Ohioans received the influenza vaccination during the previous year despite the *Healthy People* goal to increase rates of seasonal influenza vaccination to 90% in the over 65 population.[7]
- Prior to 2010, when the ACIP universally extended its recommendation for influenza vaccination to all over the age of 6 months, vaccination against seasonal influenza was recommended for high-risk patients, such as those with an immunocompromising or chronic condition. Despite a continued recommendation for vaccination of high-risk patients, data indicate that rates also fall short of the *Healthy People* goal of 90%.[2]
    - In the 2007-2011 U.S. National Health and Wellness Survey (NHWS), only 54% of those classified as high-risk reported receiving the influenza vaccination.[8]Further, vaccination rates varied across risk groups with the highest rates reported in patients with renal/kidney disease (70%) and immunocompromising conditions (56%).[8]
- Although missed opportunities for vaccination occur less frequent during the early months of the influenza season, vaccinations are addressed less frequently as the season progresses (ie, December and January), resulting in missed opportunities.[9]

Practice Gap: Awareness of the pneumococcal vaccine and its efficacy in older adults is low, resulting in continued suboptimal vaccination rates.

- Two vaccines are licensed for use in adults for the prevention of pneumococcal disease: 23-valent pneumococcal polysaccharide vaccine (PPSV23) and pneumococcal conjugate

vaccine (PCV13).
    - ACIP currently recommends a single dose of PCV13 for high-risk adults aged ≥19 years and older. It is also recommended that adults with immunocompromising conditions receive a single dose of PCV13 in addition to PPSV23.[10]
    - ACIP recommends a single dose of PPSV23 for all adults ≥ 65 years and for high-risk adults aged 19-64 years. Further, adults with immunocompromising conditions should be revaccinated 5 years after the first dose.[11]
- The *Healthy People 2020* goal is to increase the percentage of noninstitutionalized adults aged 65 years and older who are vaccinated against pneumococcal disease to 90%.[2] Data from the BRFSS indicate that rates in Ohio fall short of this goal: only 70% of Ohioans aged 65 years and older reported ever having received the pneumococcal vaccination in 2011.[12]
    - In the most recent analysis of data from the Cleveland Clinic Community Physician Partnership Quality Alliance, 59% of adults aged 65 years and older had received the PPSV23 vaccine.
- ACIP also recommends pneumococcal vaccination for high-risk adults and the *Healthy People* goal is to vaccinate 60% of high-risk adults age 19-64. However, the NHWS indicates that only 31% of adults classified as high-risk received the vaccination.[8]
- Conflicting data on the efficacy of pneumococcal vaccination against pneumococcal pneumonia in the elderly may make clinicians skeptical; however, data support its efficacy in the prevention of invasive pneumococcal disease.[13]

Barriers and Education Needs

Clinician, systems-based, and patient barriers contribute to suboptimal rates of influenza and pneumococcal vaccination.

- Data indicate that vaccination status and importance of vaccinations are not being addressed as frequently as outlined in recommendations.[14]
- Overall, healthcare providers do not perform continuous immunization surveillance. Despite the introduction of electronic medical records (EMRs), evidence indicates that missing information impedes assessment and administration of vaccinations.[15] For example, in The Cleveland Clinic Community Physician Partnership Quality Alliance, data are captured from more than 75 payment management systems and multiple EMR systems. To address this barrier, a registry has been developed to assist clinicians with the review of individual data and implementation of reminders.
- Patient refusal of vaccination is a well-established contributor to low vaccination rates. Refusal has been attributed to patient lack of perception of risk and lack of awareness of vaccines and their benefits.[16] Further, despite patient education campaigns, many continue to report fears about vaccine safety and becoming ill after vaccination.
- Numerous analyses indicate that vaccination rates are lower in rural settings and in racial/ethnic groups.[17] For example, influenza and pneumococcal vaccination rates are lower in blacks and Hispanics compared with Caucasians.[18] Lack of provider

recommendation and low awareness of the vaccines have been associated with the disparities in vaccination rates.[18]

- Standing orders programs whereby nonphysician healthcare providers administer vaccinations in primary care settings using established physician-approved policies and protocols are a proven method of increasing vaccination rates. However, practice-level barriers to their implementation have been identified.[19,20]

Many partnerships exist between public health agencies and medical and nonmedical providers to increase opportunities for immunization; however, for adults 18 and older, office-based physicians ranked highest (39.8%) among places influenza immunization was received during the 2010-11 season.[21] A survey conducted by the National Foundation for Infectious Diseases found that a clinician recommendation for vaccination is the number one vaccine motivator for patients.[22] For this reason, office and provider-based interventions to address patient and healthcare professional barriers for not receiving/administering influenza and pneumococcal vaccinations are critical.

Primary Audiences

The primary audience includes community private practice primary and subspecialty care providers within The Cleveland Clinic Community Physician Partnership Quality Alliance network. Findings and recommendations from this activity will be disseminated by the Quality Alliance to its constituents and partner organizations, as well as via a published manuscript in a peer-reviewed journal.

References

1. National Foundation for Infectious Diseases. Available at: http://www.nfid.org/publications/factsheets/adultfact.pdf. Accessed September 27, 2013.
2. U.S. Department of Health and Human Services. Immunization and Infectious Diseases. Available at: http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicId=23. Accessed September 27, 2013.
3. Centers for Disease Control and Prevention, National Center for Health Statistics, Division of Vital Statistics, National Vital Statistics Reports. 2013;64:1-17.
4. Centers for Disease Control and Prevention. Manual for the surveillance of vaccine-preventable diseases. Centers for Disease Control and Prevention, Atlanta, GA, 2012.
5. Huang SS, Johnson KM, Ray GT, et al. Healthcare utilization and cost of pneumococcal disease in the United States. *Vaccine*. 2011;29(18):3398-412.
6. Centers for Disease Control and Prevention. Available at: http://www.cdc.gov/flu/protect/keyfacts.htm. Accessed September 27, 2013.
7. Behavioral Risk Factor Surveillance System. Available at: http://apps.nccd.cdc.gov/BRFSS/display.asp?cat=IM&yr=2011&qkey=8341&state=OH. Accessed September 27, 2013.
8. Annunziata K, Rak A, Del Buono H, DiBonaventura M, Krishnarajah G. Vaccination rates among the general adult population and high-risk groups in the United States. *PLoS One*. 2012;7(11):e50553.

9. Fishbein DB, Fontanesi J, Kopald D, et al. Why do not patients receive influenza vaccine in December and January? *Vaccine*. 2006;24(6):798-802.
10. Centers for Disease Control and Prevention. Use of 13-valent pneumococcal conjugate vaccine and 23-valent pneumococcal polysaccharide vaccine for adults with immunocompromising conditions: recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR*. 2012;61(40):816-819
11. Centers for Disease Control and Prevention. Updated recommendations for prevention of invasive pneumococcal disease among adults using the 23-valent pneumococcal polysaccharide vaccine (PPSV23). *MMWR*. 2010;59(34):1102-1106.
12. Behavioral Risk Factor Surveillance System. Available at: http://apps.nccd.cdc.gov/BRFSS/display.asp?yr=2011&cat=IM&qkey=8351&state=OH. Accessed September 27, 2013.
13. Jackson LA, Neuzil KM, Yu O, et al. Effectiveness of pneumococcal polysaccharide vaccine in older adults. *N Engl J Med*. 2003;348(18):1747-55.
14. Nowalk MP, Zimmerman RK, Cleary SM, Bruehlman RD. Missed opportunities to vaccinate older adults in primary care. *J Am Board FamPract*. 2005;18(1):20-7.
15. Brownfield E, Marsden JE, Iverson PJ, Zhao Y, Mauldin PD, Moran WP. Point of care experience with pneumococcal and influenza vaccine documentation among persons aged ≥65 years: high refusal rates and missing information. *Am J Infect Control*. 2012;40(7):672-4.
16. Rehm SJ, File TM, Metersky M, Nichol KL, et al. Identifying barriers to adult pneumococcal vaccination: an NFID task force meeting. *Postgrad Med*. 2012;124(3):71-9.
17. Lu P, Bridges CB, Euler GL, Singleton JA. Influenza vaccination of recommended adult populations, U.S., 1989-2005. *Vaccine*. 2008;26(14):1786-93.
18. Winston CA, Wortley PM, Lees KA. Factors associated with vaccination of medicare beneficiaries in five U.S. communities: Results from the racial and ethnic adult disparities in immunization initiative survey, 2003. *J Am Geriatr Soc*. 2006;54(2):303-10.
19. Yonas MA, Nowalk MP, Zimmerman RK, Ahmed F, Albert SM. Examining structural and clinical factors associated with implementation of standing orders for adult immunization. *J Healthc Qual*. 2012;34(3):34-42.
20. Albert SM, Nowalk MP, Yonas MA, Zimmerman RK, Ahmed F. Standing orders for influenza and pneumococcal polysaccharide vaccination: correlates identified in a national survey of U.S. Primary care physicians. *BMC FamPract*. 2012;13:22.
21. Centers for Disease Control and Prevention. Place of influenza vaccination among adults --- United States, 2010--11 influenza season. *MMWR*. 2011;60(23):781-785.
22. National Foundation for Infectious Diseases. Available at: http://www.adultvaccination.com/newsroom/Events/2010-cdc-vaccination-rates-news-conference/2010-Survey-Backgrounder.pdf. Accessed September 27, 2013.

b. Intervention Design and Methods

In order to achieve the aforementioned goals, the Cleveland Clinic Community Physician Partnership, from which the Quality Alliance was launched, will recruit approximately 200 physicians within its 5200 physician member base to participate in this PI CME activity. Participants will be recruited by the Quality Alliance and may include group employed or affiliated individual physicians within Northeastern Ohio and Western New York. To participate,

a physician must have complete patient records for the data being analyzed, in order to provide the highest possible level of reliable data.

Learners will assess and/or implement:

- Morbidity and mortality associated with seasonal influenza and pneumococcal disease among adult patients
- Seasonal influenza and pneumococcal vaccination rates in their practice pre- and post-intervention
- Patient-specific barriers to improved adult immunization
- Healthcare Provider initiatives to overcome barriers to adult immunization
- Members from the Quality Alliance Quality Committee will identify and implement appropriate Quality Alliance registry (system-based) and physician level interventions to identify adults within recommendations for pneumococcal and influenza immunization

Outlined below are the three stages of the PI CME activity, for which participants will receive *AMA PRA Category 1 Credit*™ upon completion. Considerate of physician requirements for Maintenance of Certification, this activity will be submitted to ABIM for approval through their Approved Quality Improvement (AQI) Pathway to apply toward their Self-Evaluation of Practice Performance requirement.

<u>Stage A: Data Collection and Assessment</u>
Patient-level data aligned to the identified quality measures will be extracted from Quality Alliance registry, and personal performance reviewed in an online portal by each of the 200 participating physicians. Data from a minimum of 25 patient charts will be reviewed by each learner. Registry data for non-participating physicians within the Quality Alliance will serve as a mode of comparison (control group). This data will be used to establish a baseline against which the effectiveness of the educational interventions is measured. Data collection will focus on the following proposed quality measures (to be confirmed by faculty):

  - *percentage of high-risk patients aged 18-64 who have documentation of receiving pneumococcal immunization.*
  - *percentage of patients aged 65 years and older who have documentation of receiving pneumococcal immunization.*
  - *percentage of high-risk patients aged 18-64 who have documentation of receiving seasonal influenza annually.*
  - *percentage of patients aged 65 and older who have documentation of receiving seasonal influenza annually.*

In the event that collected patient-level do not align exactly to all ACIP recommended high-risk groups (ie, cochlear implants, asplenia), identifiable factors will serve as a proxy to assess risk status.

Other independent variables will also be collected and cross tabulated against the above measures. Such variables may include, but aren't limited to: age, race/ethnicity, geographic area (rural vs. urban), county, type of facility (in which the physician practices), size of facility, socioeconomic factors, and percentage of patients insured by type.

Stage B: Intervention

Considerate of data collected as part of Stage A, faculty will construct a curriculum to deliver as part of an online educational intervention for the participating physicians (N=200).

Participants who complete Stage A of the PI activity will be dynamically directed to a learner portal that will showcase 3 targeted online activities (webcasts) and a collection of non-educational strategies/resources.

For the online education, three topics will be developed. Topics may include influenza prevention, pneumococcal disease prevention, and action plans for immunization management. Each online activity consists of synchronized slides and audio and will address key performance issues identified through Stage A performance.

Each webcast is 25-35 minutes long and includes a 15-20 minute didactic presentation and 10-15-minute case discussion. Slides from the webcasts will be available for participants to download, and supplemental resources (eg, patient education materials, guidelines, peer reviewed articles, algorithms, etc.) will be made available.

Three potential topics for the webcasts/interventions include:

Topic 1: Influenza Prevention: The 2014-2015 Season and Beyond

- Incidence and burden of influenza
  - Risks in older and high-risk patients
- Local and seasonal variations
- Licensed influenza vaccines
  - Trivalent and quadrivalent formulations
- ACIP recommendations for vaccination
  - Combining vaccinations
  - Contraindications
- Sequential infection: influenza and pneumonia

Topic 2: Preventing Pneumococcal Disease in Your High-Risk and Older Patients

- Incidence of pneumococcal disease clinical syndromes
- Morbidity and mortality in high-risk and older adults
- Licensed pneumococcal vaccines
  - Formulations and indications
  - Efficacy data
- ACIP recommendations
  - Vaccination and revaccination schedules for high-risk and older adults

- Contraindications

Topic 3: Developing an Action Plan for Your Practice

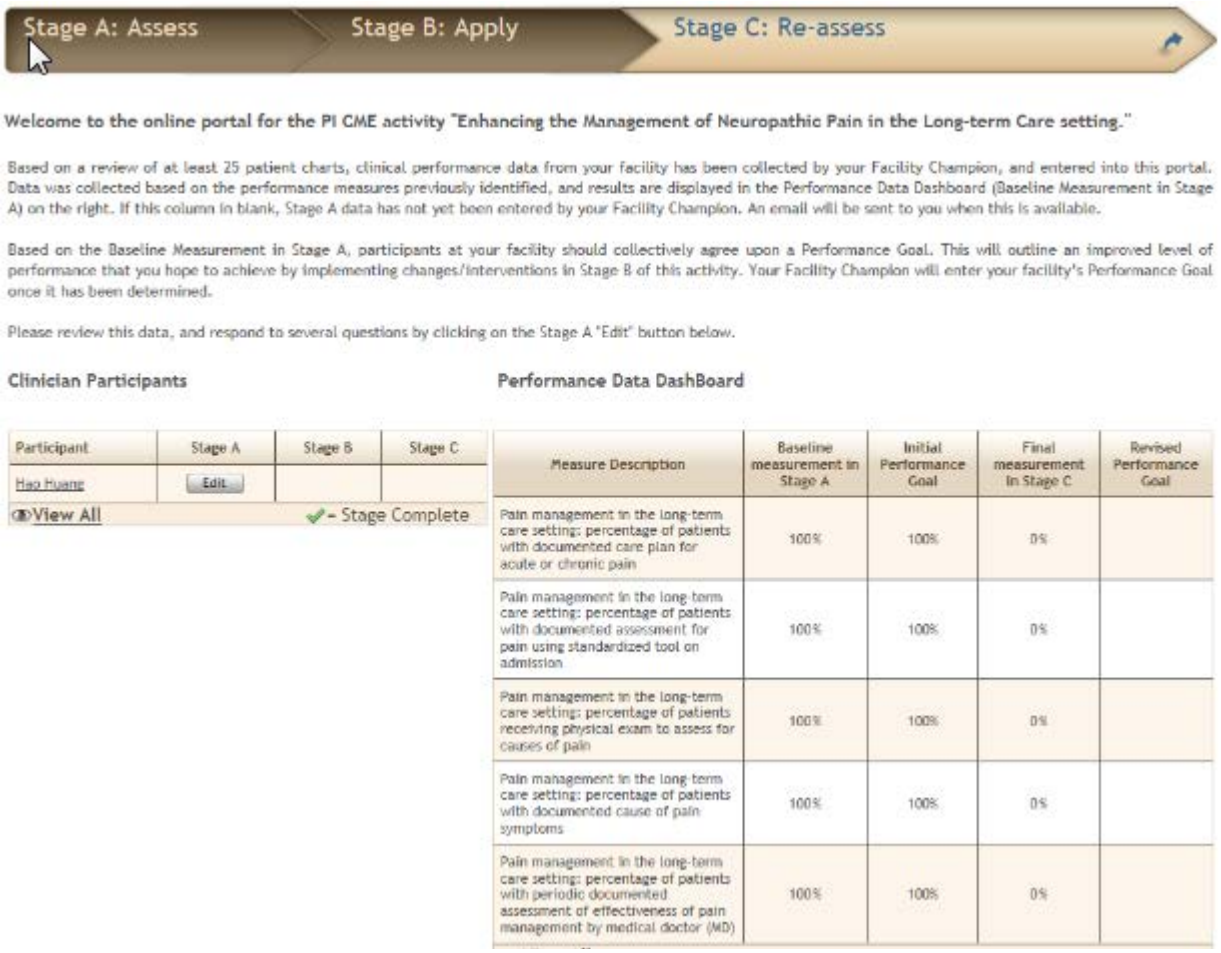
- Barriers to vaccination
  - Clinicians' competing priorities
  - Patient hesitancy and refusal
  - System-based vaccine surveillance
- Strategies for patient education and motivation
- Role of SOPs
- Employment of technology/registry data analysis
- Seasonal preparedness
  - Vaccine availability and storage
- Local and national resources for resource materials

Additionally, the Quality Committee within the Quality Alliance will review aggregate data from Stage A and determine appropriate system-based interventions for learners. Interventions might include flags and reminders within the Quality Alliance patient registry to improve surveillance and capitalize on immunization opportunities for individual patients.

Stage C: Data Collection and Reassessment

Patient-level data from the Quality Alliance registry will be collected for all participating physicians after several months of implementing new processes/protocols identified in Stage B. Data from the control group will also be collected, from comparison.

A screen shot from the PI learner portal of a different PI/QI activity is provided below for illustrative purposes:



Outcomes & Publication

The findings from the PI activity will be compiled as a Toolkit, and a manuscript written to provide a framework for spreading the successful practices learned. It includes an assessment of resources required to provide optimal immunization practices, time parameters, strategies to overcome barriers and ongoing evaluation strategies to measure success.

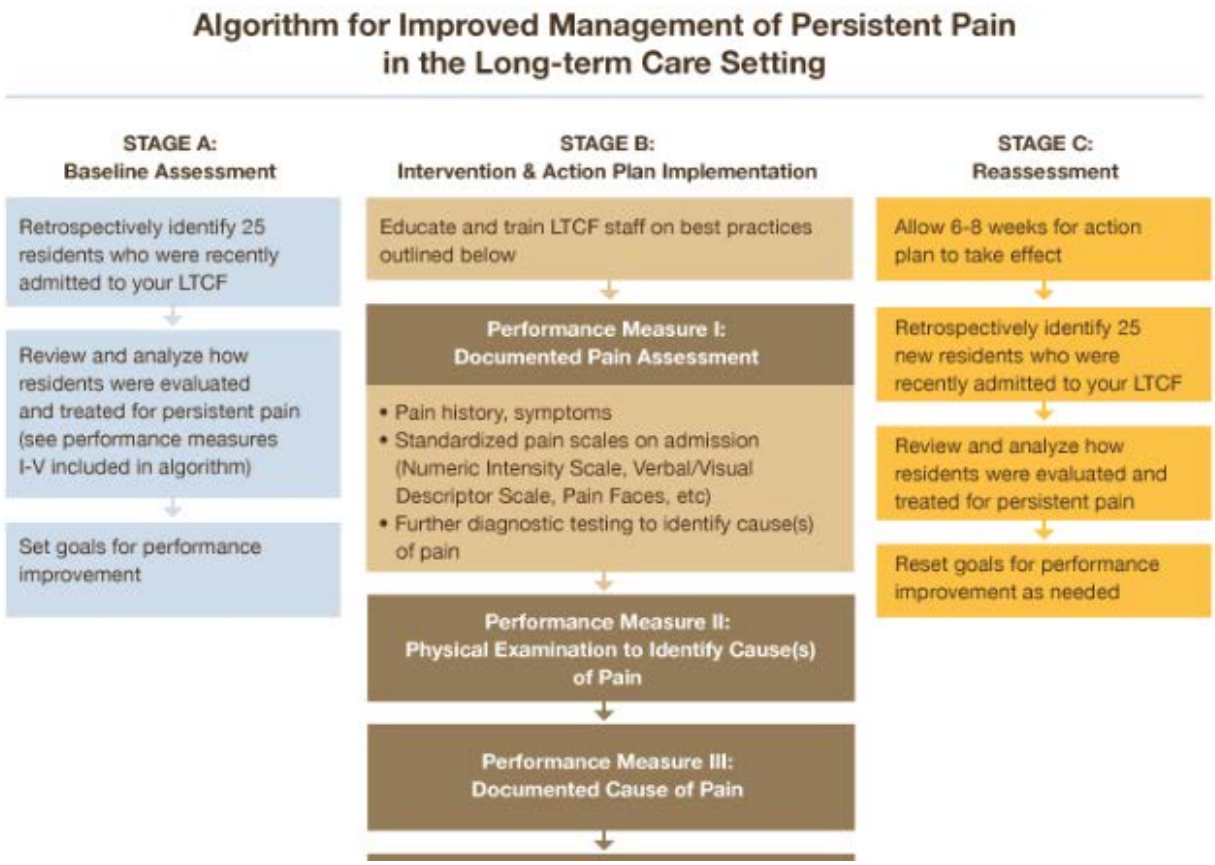
A sample Toolkit may look as follows:

Toolkit: Enhancing the Management of Neuropathic Pain in the Long-term Care Setting

This toolkit provides strategies and templates to help long-term care facilities and their clinicians implement a performance improvement project. The goal of this project is to help clinicians accurately and appropriately manage residents with persistent pain. The toolkit includes the following components:

1. Introduction
2. Algorithm and instructions for toolkit implementation |
3. Sample data collection form and performance measures/calculation instructions
4. PowerPoint slides used during Stage B clinical in-service meetings
5. List of resources available for Stage B intervention |

The information included in this toolkit was prepared by The Academy for Continued Healthcare Learning (ACHL) and faculty members as outlined in the Introduction.



This manuscript will be submitted for publication in a peer-reviewed journal as well as disseminated by the Quality Alliance amongst its members and to other Cleveland Clinic affiliates nationwide. It will also be posted online as part of the Toolkit following journal publication.

Proposed Contribution & Design Rationale

A recent integrative review of the literature demonstrated that immunization rates increased consistently when health care systems supported organizational changes in clinical procedures and staffing. (Koch 2011) For this reason, a PI activity delivering education at the point of care is the optimal approach to drive change at the system level.

Focusing education and data collection at the regional level allows for greater control of the educational design by isolation of variables that may influence outcomes such as geography, staffing mix, patient demographics and funding sources. The Cleveland Clinic Physician Partnership is an ideal practice sample due to its ability to deliver representation in a system of care with established quality measures, patient demographics crossing racial and socioeconomic profiles, and access to the patient population desired and their primary care providers through partnership with the Quality Alliance.

c. Evaluation Design

The performance improvement platform to be used enables analysis at Moore's Levels 1 through 5. As outlined in the Intervention Design and Methods above, data will be drawn directly from each physician's patient records. This data is part of the Quality Alliance registry, with specific data to be extracted from the registry for review and analysis, while protecting patient/resident/employee privacy. In addition to the 200 participating physicians participating in this activity, a control group will also be identified to serve as a comparison.

Each physician will assess and report on his/her respective performance against the identified quality measures. A summary of findings will show any statistically significant changes (as shown through *p*-value) in performance based on the quality measures. Improvement will also be shown in comparison to the control group, national averages, and quality targets.

The proportion of subjects who are vaccinated prior to and following the intervention will be provided overall, and for the high-risk adult (<64 years) and elderly (>=65 years) subgroups, including 95% confidence intervals. Vaccination percentages will be reviewed for each participating physician. Frequency distributions and summary statistics of subject demographic characteristics (age, gender ,race, socioeconomic status), and physician geographic area, facility type, facility size, and insurance type will be provided. The association of intervention and baseline characteristics for categorical variables will utilize a Chi-square test, and for continuous variables will utilize an analysis of variance.

Cleveland Clinic, the Physician Partnership/Quality Alliance and ACHL will assess and compare findings to identify any ongoing quality issues. Upon completion of analyses of outcomes data, a summary will be submitted for publication to a peer-reviewed journal, disseminated through an online Toolkit and through Cleveland Clinic constituents.

Success relative to the program goals will be established if vaccination rates for the adult populations identified improve over baseline. Improvement will be measured relative to each physician's individual vaccination practices, pre (Stage A) and post (Stage C), the aggregated vaccination practices of all participating physicians (N=250) versus the control group (registry data), national averages, and whether vaccination rates increased 10% over baseline.

Statistical analysis will be conducted using SAS (Cary, NC).

3. Detailed Workplan and Deliverables Schedule

The workplan for this initiative follows the Plan-Do-Study-Act (PDSA) model to quality improvement. Project management steps are organized around this QI approach, with clearly defined phases for planning, implementation and monitoring. These stages support successful project delivery and focus the activity on the use of evidence-based vaccination practices.

Each step of the proposed quality improvement activity is listed in detail in the table that follows, outlining implementation over approximately 2.5 years.

Project Phase1	Pre Planning
Key Deliverables	• Recruitment of faculty • Establishment/confirmation of goals and objectives • Determination on data methodologies with biostatistician • Creation of a web-based data portal • Development of communications plan and outreach strategies • Completion of CME/CE planning document

Activities		**2013**	**2014**				**2015**	**Lead Person**
		Q4	**Q1**	**Q2**	**Q3**	**Q4**		
1.1	Initial planning call with all joint sponsors	X						ALL
1.2	Approval of faculty& COI review	X						CCF - SK
1.3	Generation and dissemination of faculty invitations	X						ACHL - VS
1.4	Review and determination of goals, objectives, evaluation criteria	X	X					Faculty
1.5	Creation of online data collection mechanisms		X					Biostatistician
1.6	Oversee development of web-based data portal		X	X				ACHL - VS
1.7	Creation of physician outreach letters		X					ACHL - VS
1.8	Dissemination of physician outreach letters		X					QA- TE
1.9	Physician recruitment		X	X				QA- TE
1.10	CME Planning document		X					ACHL - MD
1.11	ABIM application for AQI Pathway (MOC)			X				ACHL - MD

Project Phase 2	Stage A
Key Deliverables	• Physician portal training • Initial physician learner and control group data extraction • Stage A data compilation and analyses • Creation of intervention materials

Activities		**2013**	**2014**				**2015**	**Lead Person**
		Q4	**Q1**	**Q2**	**Q3**	**Q4**		
2.1	Create portal training manual on expectations, data submission criteria, reporting		X	X				ACHL - VS

2.2	Post online training manual for participating physicians			X				ACHL - VS
2.3	Create contact database for ongoing outreach, notifications and reminders		X					ACHL - VS
2.4	Extract/Review individual patient registry data, and calculate learner and aggregate performance data relative to quality measures			X				ACHL - VS and QA - TE
2.5	Physician learners to reflect on Stage A performance data, and answer reflection questions about their performance							Physicians
2.6	Compile and prepare analysis of Stage A data			X				ACHL - NM
2.7	Review Stage A findings – prepare strategies for Stage B intervention			X				Faculty

Project Phase 3	Stage B
Key Deliverables	• Online education portal with individualized curricula for identified learner profiles • Individual physicians to complete interventions (webcasts) and develop action plans and review support/resource materials • Implementation of changes by physicians and/or within Quality Alliance system

Activities		**2014**				**2015**	**Lead Person**
		Q1	**Q2**	**Q3**	**Q4**	**Q1**	
3.1	Create online portal with ability to direct to customized content based on learner profiling mechanism		X	X			ACHL - VS
3.2	Prepare slides and content for all versions of webcasts/Record online webcasts		X	X			ACHL - TB/NM
3.3	Create support/resource materials for action plans (revised protocols, patient ed, etc)		X	X			ALL
3.4	Perform compliance reviews of all content		X	X			CCF - SK
3.5	Release Stage B Interventions (webcasts) to participating physicians		X	X			ACHL - VS and QA
3.6	Manage learner participation			X	X	X	ACHL - DP
3.7	Manage feedback mechanisms (for action plan creation)			X	X	X	ACHL - NM
3.8	Physicians to view webcasts/interventions based on their learner profile, and create action plans within portal			X	X	X	Physicians

3.9	Implement system-wide changes within Quality Alliance				X	X	QA - TE

Project Phase 4	Stage C
Key Deliverables	• Post intervention physician learner and control group data extraction • Stage C data compilation

Activities		**2015**				**Lead Person**
		Q1	**Q2**	**Q3**	**Q4**	
4.1	Extract/Review individual patient registry data, and calculate learner and aggregate performance data relative to quality measures		X			QA and ACHL
4.2	Physician learners to reflect on Stage C performance data, and answer reflection questions about their performance					Physicians
4.3	Compile and prepare analysis of Stage C data		X			ACHL - NM
4.4	Review Stage C findings – prepare data analyses		X	X		Faculty/ACHL

Project Phase 5	Outcomes and Publication
Key Deliverables	• Creation of toolkit and manuscript on improved vaccination practices • Submission to peer-reviewed journal • Dissemination to QA members and other Cleveland Clinic affiliates

Activities		**2015**				**Lead Person**
		Q1	**Q2**	**Q3**	**Q4**	
5.1	Write outcomes manuscript/toolkit			X		Faculty/ACHL
5.2	Publication submissions to journal(s)			X		Faculty/ACHL
5.3	Disseminate publication to Cleveland Clinic constituents				X	QA - TE
5.4	Provide final outcomes report to grantor				X	CCF-SK/ACHL
5.5	Financial reconciliation				X	ACHL - VS

D. ORGANIZATIONAL DETAIL

1. Leadership and Organizational Capacity

The Cleveland Clinic Center for Continuing Education
In 1933 the Cleveland Clinic held its first post-graduate training program. Today, 80+ years later, the Center for Continuing Education has approximately 45 staff dedicated to the successful creation, implementation, and promotion of our CME activities.

Researching and developing new and innovative methods of delivering high-quality Cleveland Clinic CME characterizes the Center's tradition of excellence. The Center is committed to sharing our long history of providing continuing medical education to a national and global audience of physicians, nurses, and other medical professionals. Accredited to provide continuing medical education for physicians by the Accreditation Council for Continuing Medical Education (with commendation for exemplary performance), the Center is one of the largest and most diverse academic CME providers in the world.
http://www.clevelandclinicmeded.com/welcome.htm

The Cleveland Clinic Community Physician Partnership Quality Alliance
The Cleveland Clinic Quality Alliance is a program that was conceived and launched by the Cleveland Clinic Community Physician Partnership in 2010. Its goal was and is to provide a framework for independent physicians and Cleveland Clinic physicians to collaborate in the provision of improved healthcare quality and value. The network interfaces with 4 EMR systems, 75 interfaced patient management systems, 1158 independent providers, and 5374 physician members. The Quality Alliance has developed an actionable patient registry for chronic disease management, age appropriate health screenings and vaccinations. The Quality Alliance has now also devolved an affiliation with an out of market affiliate in Buffalo NY. We expect that the QA will continue to develop other out of market affiliates with an interest in data sharing and quality improvement. *http://www.cccpp.org/yearinreview/default.html*

The Academy for Continued Healthcare Learning (ACHL)
The ACHL has been a provider of CME/CE for over 22 years, receiving initial accreditation in 1998. The ACHL's mission is to design, develop, and implement quality continuing education activities that will have a positive influence on the way healthcare is practiced and ultimately to improve the quality of care provided to patients. The ACHL serves its mission by designing directly sponsored and jointly sponsored educational activities using a variety of educational methods, media, and approaches.

ACHL will serve as the educational collaborator and logistics partner for the co-sponsored initiative proposed herein. Responsibilities include faculty management, instructional design and data analysis, coordination of all interventions and education, and creation of a web-based QI CME portal for data collection and reporting. ACHL has significant experience in managing PI/QI activities in a variety of therapeutic areas and settings. www.achlcme.org

2. Staff Capacity

The project manager is responsible for directing all areas of project management: concept, planning, execution, monitoring and evaluation/reconciliation. The project manager selected for this activity (if accepted) is Vanessa Senatore, who has nearly eleven years project management experience with demonstrated success in managing large-team QI programs with multiple internal and external stakeholders. She will be positioned as both the external and internal authority for this project, serving as the primary point of contact with all educational collaborators and vendors. All decisions are to be approved through her and she is responsible for meeting project endpoints on time, within budget, and consistent with the quality endpoints designated.

A secondary project manager, Denise Perez, will also be assigned to assist Vanessa and ensure continuity in service and communications. The following staff members will support the development and execution of the proposed initiative:

Vanessa Senatore, Lead Project Manager
Years Experience: 9 Number of PI/QI Activities (Prior Experience): 3
Areas of Expertise: Project management, QI/PI, multi-arm initiatives, significant experience with point-of-care collaborations

Denise Perez, Secondary Project Manager
Years Experience: 5 Number of PI/QI Activities (Prior Experience): 5
Areas of Expertise: Project management, QI/PI, meningococcal vaccination

Tarra Barot, PhD, Lead Editorial Director
Years Experience: 6 Number of PI/QI Activities (Prior Experience): 4
Areas of Expertise: Academic background in basic neurobiology. Professional background in psychiatry, neuroscience, oncology, elderly care scenarios. Experience teaching microbiology to community college students. Authored scientific abstracts, posters, and co-authored manuscripts

Natasha Mitchner, PhD, Lead Data Collection/Educational Design
Years Experience: 14 Number of PI/QI Activities (Prior Experience): 3
Areas of Expertise: Academic and professional background in immunology; developed content for CME activities on pneumococcal vaccination; educational design, process implementation and content development for PI activities; assisted with publication of numerous journal articles

Mindi Daiga, MBA, Lead Outcomes Management
Years Experience: 13 Number of PI/QI Activities (Prior Experience): 7
Areas of Expertise: QI/PI, outcomes methodologies, CME/CE accreditation standards and compliance

The below capacity assessment depicts the commitment of staffing resources (demand vs capacity) toward this activity over the course if its lifecycle. Future forecasts are based on previous year actuals.

Individual	Role	Assessment by Hours	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015
Vanessa Senatore	Lead Project Manager	Capacity	450	450	450	450	450	450	450	450	450
		This Activity	25	40	30	25	15	5	5	10	10
		Other Projects	335	350	350	390	380	400	375	375	375
		Unused Capacity	90	60	70	35	55	45	70	65	65
Denise Perez	Support Project Manager	Capacity	450	450	450	450	450	450	450	450	450
		This Activity	20	20	20	20	15	50	5	5	5
		Other Projects	380	390	400	400	380	380	390	380	380
		Unused Capacity	50	40	30	30	55	20	55	65	65
Tarra Barot	Lead Editorial Director	Capacity	450	450	450	450	450	450	450	450	450
		This Activity	5	15	50	50	5	5	30	75	20
		Other Projects	375	400	400	385	385	400	400	380	385
		Unused Capacity	70	35	0	15	60	45	20	-5	45
Natasha Mitchner	Lead Data Collection/ Ed Design	Capacity	450	450	450	450	450	450	450	450	450
		This Activity	5	10	15	15	10	5	5	25	5
		Other Projects	375	400	400	390	390	400	400	380	380
		Unused Capacity	70	40	35	45	50	45	45	45	65
Mindi Daiga	Lead Outcomes Management	Capacity	450	450	450	450	450	450	450	450	450
		This Activity	8	8	5	5	3	3	5	7	5
		Other Projects	425	425	425	425	420	425	425	425	425
		Unused Capacity	17	17	20	20	27	22	20	18	20

E. BUDGET

Direct Costs	US $	Description
Direct Labor Costs		
Program Management	$32,175.00	Phases 1-5: Initiate program, CME/CE documentation, financial management, development of physician recruitment materials, development of portal training materials, oversee portal development
Liaise with Quality Alliance	$7,750.00	Phases 1-5: overall collaboration with Quality Alliance
Faculty Recruitment and Management	$5,000.00	Phases 1 &3: generation of invitations, management of honoraria, coordination of schedule, oversight of stage b activity development
Production Management/Graphic Design	$6,250.00	Phases 1 & 3: creation of collateral material: design elements for web portal, slide template, letterhead
Content Development	$43,750.00	Phases 1-5: creation of slides for Stage B activities, creation of support materials for action plans, manuscript development, compile and prepare data analysis
Editorial Support	$6,750.00	Phases 1-5: proofreading, copyediting, permissions/reference management
QA Physician Recruitment	$75,000.00	Phases 1-5: QA time for physician recruitment and engagement
QA Management	$5,000.00	Phases 1-5: QA time for collaboration with ACHL, dissemination of physician outreach materials
QA Provider Liaison	$10,000.00	Phases 1-5: QA time for collaboration with ACHL
QA Director Oversight	$10,000.00	Phases 1-5: QA time for director oversight
Direct Initiative Costs		
CME Certification	$15,000.00	Phases 1-5: Cleveland Clinic Certification Costs
ABIM AQI Pathway Application	$1,250.00	ABIM application fee for MOC Part IV
Data Integration	$2,500.00	Phase 2 & 4: ACHL costs for data integration
Outcomes Oversight	$2,500.00	Phases 1-5: Cleveland Clinic Outcomes Review Costs
Permissions	$1,500.00	Phase 2:Costs to obtain rights for reprints of charts, data, etc.

Printing/Mailing Letter of Request	$5,500.00	Phase 1: Cost of mailing Physician Recruitment Letters
HTML Email Creation	$1,500.00	Phase 1: ACHL Email creation costs
Website Creation and Content Pages-Stage B Activity	$6,000.00	Phase 1-4: Costs for Stage B education development
Audio Capture of Presentation-Stage B Activity	$1,500.00	Phase 2: Costs for Stage B education development
Production and Editing-Stage B Activity	$6,000.00	Phase 2: Costs for Stage B education development
Outcomes Management and Reporting	$8,000.00	Phase 1-5: data management and analysis
PI Portal Development	$75,000.00	Phase 1: Costs for Web portal creation and logic
EMR Interface-IT Integration (QA)	$50,000.00	Phase 2 & 4: QA Costs for registry/IT Integration
Open Source Fees for Journal Article	$5,000.00	Phase 5: Costs for journal submission
Biostatistician Fees	$5,000.00	Phase 1 & 5: fee for outsourced service
Chair Honoraria	$5,000.00	Phase 3: Honoraria for entire initiative
Faculty Honoraria	$10,500.00	Phase 3: Honoraria for entire initiative 3 Faculty @ $3500
Subtotal	**$403,425.00**	
Institutional Overhead/Indirect Costs		
Administrative Overhead	$900.00	Phase 1-5: miscellaneous phone, copying, postage costs
Subtotal	**$900.00**	
Total Initiative Budget	**$404,325.00**	
Total Funding Requested	**$404,325.00**	

F. REQUIRED DOCUMENTATION

Letter of Agreement to be signed at time of award.

G. STAFF BIOSKETCHES

Cleveland Clinic Center for Continuing Education
Steven Kawczak, PhD
Associate Director

Dr. Kawczak has been active in continuing medical education for over fifteen years at the Cleveland Clinic Center for Continuing Education, where he has helped develop a large, leading academic medical center-based CME program. He has implemented educational collaborations and CME interventions globally, developed training for CME planners, and has extensive experience designing an infrastructure to manage a CME program and maintain regulatory compliance.

Dr. Kawczak is a member of the Board of Directors of the Alliance for Continuing Education in the Health Care Professions, an international membership community of more than 2,200 professionals dedicated to accelerating excellence in health care performance through quality education, advocacy, and collaboration. He was selected to serve as Treasurer-Elect of the Alliance in 2014 and Treasurer the following year. In addition, Dr. Kawczak serves as an ACCME Surveyor. He recently conducted important research about the relationship of commercial funding to participants' perceptions of bias, frequently presents at meetings for CME professionals and is a peer reviewer for leading academic journals.

Dr. Kawczak holds a doctor of philosophy degree from the University of Akron in the humanities. His major areas of interest include CME and quality, issues of bias in medical education, thanatology and culture, and the humanities and medicine.

The Cleveland Clinic Community Physician Partnership Quality Alliance
Tarek Elsawy, MD, FACP
Chief Medical Officer, Cleveland Clinic Community Physician Partnership and the Quality Alliance

Dr. Elsawy is the Chief Medical Officer of the Community Physician Partnership and Quality Alliance, Cleveland Clinic's clinical integration program, the third largest network in the country with over 5,300 providers. Dr. Elsawy's current focus is the development and implementation of the Cleveland Clinic's clinical integration strategy both in Northeast Ohio and nationally. He is currently driving several projects/collaborations focusing on population health management. He serves on the Board of Trustees for the Cleveland Clinic's Community Physician Partnership and Marymount Hospital and formerly Vice-President of the Cleveland Clinic Regional Physician

Practices. He is also an Internist with the Cleveland Clinic Foundation. Dr. Elsawy has been practicing medicine for 17 years.

The Academy for Continued Healthcare Learning
Tarra Barot, PhD
Scientific Director

Tarra has six years of experience in CME/CE with her primary strength in peer-to-peer education.

Prior to working as a scientific director, Tarra obtained her PhD in behavioral neuroscience at Oregon Health & Science University in Portland, OR and focused on gene expression profiles correlated with repeated ethanol administration. After completing her PhD, Tarra continued her training with a drug abuse post-doctoral trainee award at the University of Chicago. Concurrently, she also started to teach life science classes to community college students. It was during this time that the desire to combine both written and verbal communication spurred her to examine alternate careers in science.

Mindi Daiga, MBA
Director of Compliance and Outcomes Management

Mindi has 13 years of client experience in conference management and CME. At ACHL, she manages multiple accreditations, including ACCME, ACPE, IACET, CDR, BRN, and CCMC, and ensures that ACHL activities are designed, developed and implemented in accordance with appropriate regulatory guidelines. She also leads ACHL's efforts in performance and quality improvement.

Prior to joining ACHL, Mindi worked at the American Medical Association, where she managed aspects of their accredited CME program. She also spent 7 years managing conferences for a variety of healthcare associations.

Mindi earned a Bachelor of Arts degree in Business Administration from Augustana College, and a Master of Business Administration degree from DePaul University.

Vanessa Senatore
Associate Program Director

Vanessa has over 9 years of continuing medical education experience that includes implementing complex educational platforms in varied media. As an Associate Program Director at ACHL, she is responsible for establishing and maintaining relationships educational stakeholders/collaborators (eg, associations, payers, hospitals, faculty, etc), and presenting innovative solutions to meet educational objectives and drive improved quality of care.

Vanessa earned a Bachelor of Arts degree from Illinois State University in Psychology.

Lisa Keckich, MS
Executive Director

Lisa has over 18 years of client services experience that encompasses roles in CE, association management, business development, strategic planning, outcomes management, and operations. As Executive Director at ACHL, she leads cross functional teams that collaborate as a focused unit to achieve business goals and drive the evolution of concepts into achievable business strategies. She is responsible for the overall development and implementation of educational activities that support the continuing professional development of physicians, nurses, pharmacists, and other clinicians.

Prior to ACHL she spent 6 years at DIME, a full service accredited provider and 9 years at SmithBucklin Corporation, as an executive director and consultant serving healthcare associations.

Lisa earned a Bachelor of Arts degree from the University of Denver in sociology, and a Master of Science degree from DePaul University in public service management.

Denise Perez
Associate Program Manager

Denise Perez has provided logistical support and project management for CME activities for over 5 years, including support on 5 PI CME and QI activities in the areas of pain management, multiple sclerosis, Alzheimer's, and HCV. She also has experience in executing education in long-term care facilities, specialty clinics and correctional facilities.

Natasha Mitchner, PhD
Scientific Director

Natasha has been working in medical education and communications since 2000. As Scientific Director at ACHL, Natasha works collaboratively with faculty to develop educational strategies and scientific content for live and digital-based CME programs across diverse therapeutic categories. Prior to joining ACHL, Natasha worked at DIME, a full service accredited provider, for over 7 years. Natasha completed her undergraduate work at Hampshire College and received a PhD in Cell and Molecular Biology from the University of Cincinnati. She began as a scientific writer after a post-doctoral fellowship at Northwestern University.

H. LETTER OF COMMITMENT (JOINT)

Cleveland Clinic

Cleveland Clinic

Center for
Continuing Education

October 21, 2013

Pfizer Medical Education Group

Re: Letter of Commitment

Dear Review Board:

The Cleveland Clinic Center for Continuing Education, The Cleveland Clinic Community Physician Partnership Quality Alliance, and the Academy for Continued Healthcare Learning (ACHL) are committed to fully support and participate in the execution of the proposed program titled, ***Improving Adult Vaccination Practices in an Academic Primary Care Quality Alliance: A Focus on Influenza and Vaccine-Preventable Pneumonia***

To that end, all organizations will manage resources to ensure the successful completion of this program and commit to completing the roles and responsibilities as outlined in the formal grant request.

Sincerely,

Steven Kawczak, PhD
Associate Director
Cleveland Clinic Center for Continuing Education

Lisa C. Keckich
Executive Director
The Academy for Continued Healthcare Learning

Tarek Elsawy, MD, FACP
Chief Medical Officer
The Cleveland Clinic Community Physician Partnership Quality Alliance

The Cleveland Clinic Foundation | 9500 Euclid Ave., KK31 | Cleveland, OH 44195 | P (216) 444-9990 F (216) 445-9406

Cleveland Clinic

Center for
Continuing Education

December 9, 2013

Pfizer Medical Education Group

Re: Additional grant detail
Grant ID: 9714885

Dear Review Panel:

Thank you for the opportunity to provide additional details on our proposed program titled, *Improving Adult Vaccination Practices in an Academic Primary Care Quality Alliance: A Focus on Influenza and Vaccine-Preventable Pneumonia.* Outlined below please find more information about your specific inquiries.

Quality Alliance Physician Recruitment Fee:
The Quality Alliance physician recruitment fee encompasses the following:

- Time investment by 2 physician reps, 1 project manager and 1 quality manager over a six-month timeframe
    - Roles include managing recruitment emails/mailings, website postings and updates, phone calls and office visits to interested learners, liaison with joint sponsors (CCF/ACHL)
- Staff coordination and management of Quality Alliance Quality Committee (12 physicians) review and approval of recruitment material and efforts
- Website update expenses by website management vendor (updates specific to announcing and recruiting for the activity)
- Email creation and distribution by website management vendor, multiple email touchpoints to Quality Alliance employee and affiliated primary care practices expected
- Coordination between recruited physicians and ACHL to ensure participant registration into web-based portal

Upon further inquiry, IRB approval will not be needed for this project as was anticipated at the time of grant submission. Based on that change, as well as a reduction in fees, we are able to lower the QA Physician Recruitment budget from $75,000 to $60,000.

Outcomes Levels 4 and 5:
Level 4 (competence) and Level 5 (performance) outcomes will be evaluated in this activity.

For level 4 outcomes analysis, participants will be asked to summarize any practice, process and/or outcomes changes that resulted from this PI CME activity and outline any additional changes/interventions they might further implement to further improve their own performance.

To obtain level 5 outcomes data, the proposed educational initiative will have participants submit performance improvement plans relative to the selected quality measures, customized based on the results of their chart reviews (data extracted from the Quality Alliance registry in Stage A relative to their performance). Faculty and joint sponsors will review, offering suggestions whenever necessary. Following completion of Stage B (and at a point in time that aligns with prime vaccination periods) participants will asked to review a set of chart data extracted from the registry to see if the intervention has had a positive effect on their performance practices and in turn on the health of their patients.

Individual physician performance improvement plans may consist of obtaining additional education about improving vaccination rates, and implementing practice-specific interventions, such as creating/implementing new protocols.

To further assess the success of the interventions in improving physician performance, a control group will be utilized in this activity. Performance data from the participants in the PI activity (test group) will be evaluated against the performance data of the control group (non-participants) during Stages A and C. This will allow us to more confidently attribute changes in performance following the system-level and physician-level interventions.

Case Discussions – Interactivity:
Each webcast in Stage B will include a 15-20 minute didactic presentation and 10-15 minute case discussion. Faculty will introduce a case presentation, assess the need for vaccination, and/or review strategies to overcome any barriers to vaccination. As the faculty member reviews each case, questions will be posed for learners to reflect on while reviewing the online education. Additionally, an “Ask the Expert” feature will be available at all times within the webcast platform to provide the learners an opportunity to submit questions as they are viewing the education. Questions will automatically be submitted to faculty to respond directly to the learner. Additionally, appropriate questions and responses will be posted to a Discussion Board to provide an additional resource accessible to all learners as they view the webcasts. This on-demand format was selected based on feedback and learning preferences identified by this target audience.

A screenshot of this functionality from another activity is shown below. An example of case discussion slides from a similar activity demonstrates the level of detail that may be included in the case presentation and reflection questions are also shown below.

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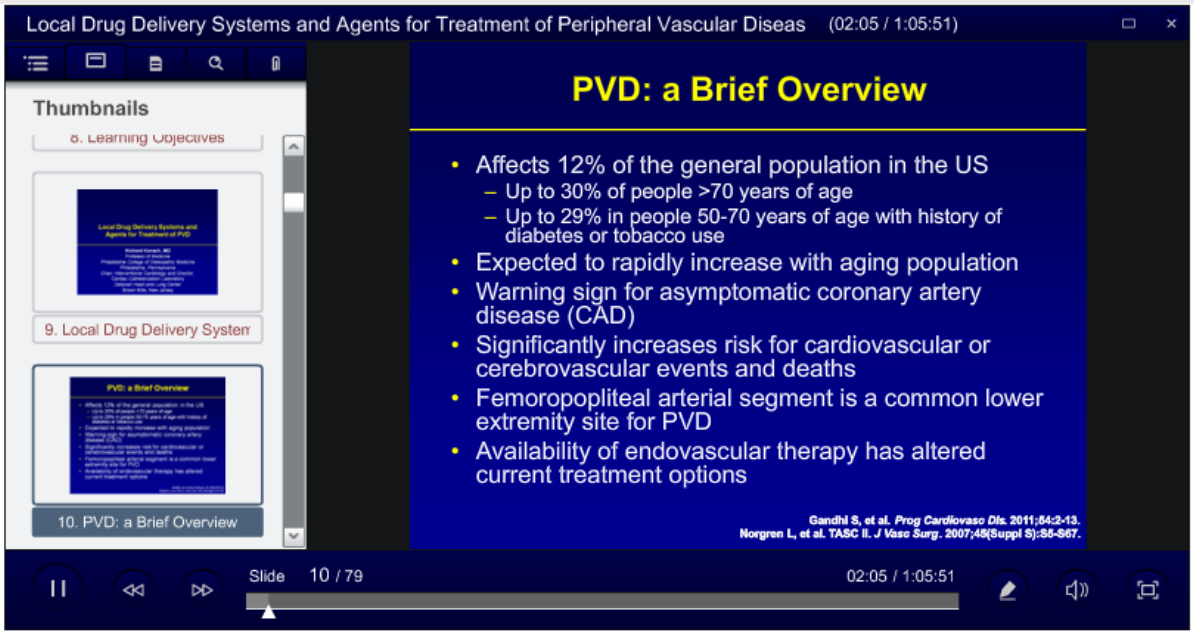


ASK QUESTION

DISCUSSION BOARD

Patient Case #2

- Elaine is a 70 year old woman residing alone in her own home
- Elaine's daughter, Corrine, lives 20 minutes away and visits her once a week in addition to chatting with her for a few minutes daily
- Lately, her daughter has noticed that her mother has become forgetful
  - She has forgotten to go to her weekly card game with her friends twice (a pastime that she regularly partakes in)
  - When Corrine has visited, she has noticed that the kitchen is disorganized (utensils are unwashed, food is not refrigerated)

Follow-up

- Medical History
  - Besides elevated blood pressure for which Elaine takes an ACE inhibitor, she does not have any other documented medical diagnoses
- Screening
  - What screening tests would you perform to differentiate between normal aging and dementia?
  - How would you progress to a diagnosis of AD?
- Treatment
  - What kinds of steps can be taken to lengthen Elaine's stay in her own house?
  - What types of factors should be considered in transitioning Elaine to either an assisted living facility or a nursing home?

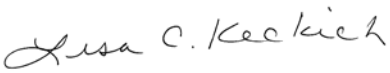
Follow-up (cont'd)

- Treatment (cont'd)
  - What types of medications would you prescribe if
    - Dementia was diagnosed?
    - AD was diagnosed?

Again, thank you for the opportunity to provide this information, and we hope it provides sufficient detail for the grant review panel. If there are any additional questions during final review, please don't hesitate to contact us.

Sincerely,

Steven Kawczak, PhD
Associate Director
Cleveland Clinic Center for Continuing Education



Lisa C. Keckich
Executive Director
The Academy for Continued Healthcare Learning

Tarek Elsawy, MD, FACP
Chief Medical Officer
The Cleveland Clinic Community Physician Partnership Quality Alliance

Cleveland Clinic

July 16, 2013

Attn: Pfizer Medical Education Group

Cleveland Clinic Foundation Center for Continuing Education in joint sponsorship with the Quality Alliance (QA) and in collaboration with The Academy for Continued Healthcare Learning (ACHL), requests support of an initiative entitled, *Improving Adult Vaccination Practices in Primary Care in Northeast Ohio: A Focus on Influenza and Vaccine-Preventable Pneumonia.*

Goal

To reduce the risk of outbreaks, serious illness, hospitalization, and death, as well as reduce direct medical costs of adult patients with influenza or pneumonia.

Objectives

The proposed objectives of this program are:

1) Implement system based tools to identify and immunize at-risk adults for pneumococcal and influenza disease
2) Increase vaccination rates for pneumococcal and influenza disease in adults in Northeast Ohio
3) Extrapolate learning's from the regional level activity and disseminate to a wider national audience via publication of toolkit designed to improve the quality of adult vaccination practices

Assessment of Need for the Intervention

Data Summary

Public health officials consent that adult immunization rates are unacceptably low. While vaccines are cost-effective preventive services, goals for pneumococcal and seasonal influenza vaccination in adults are not being achieved. Therefore, the burden of outbreaks, serious illness, hospitalizations, and death is high. The *Healthy People: 2020* goal for vaccination against pneumococcal disease in adults age 65 and older is 90%; however, the 2011 rate in Ohio was 69.9%.(CDC BRFSS, 2011) While the goal for vaccination of high-risk adults age 19-64 is 60%, the overall national vaccination rate was 20.1% in 2011.(CDC *MMWR*, 2013). Goals for seasonal influenza vaccination in adults and high-risk adults are 80% and 90%, respectively. Again, rates of vaccination in adults aged 65 and older fall short in Ohio with a 2011 rate of 61.4%.(CDC BRFSS, 2011). Many partnerships exist between public health agencies and medical and nonmedical providers to increase opportunities for immunization. Yet, for adults 18 and older, physicians' offices ranked highest (39.8%) among places influenza immunization was received during the 2010-11 season.(CDC *MMWR* 2011) For this reason, practice-based interventions to address patient and healthcare barriers to influenza and pneumococcal vaccinations are critical.

Primary Audiences

Community private practice primary and subspecialty care providers within the QA network.

Intervention Design and Methods

The Cleveland Clinic Foundation
Center for Continuing Education
9500 Euclid Ave./KK31
Cleveland, OH 44195
Tel 216.444.9990
Fax 216.445.9406

The Cleveland Clinic Community Physician Partnership, from which the QA was launched, will recruit 250 physicians within its 5200 physician member base to assess and/or implement:

- Morbidity and mortality associated with pneumococcal disease and seasonal influenza among adult patients
- Patient-specific barriers to improved adult immunization
- Healthcare Provider initiatives to overcome barriers to adult immunization
- Practice and physician level intervention methods to identify adults within recommendations for pneumococcal and influenza immunization

Stage A: Data Collection and Assessment

Aggregated patient-level data aligned to the identified quality measures will be extracted from QA registry, and personal performance reviewed in an online portal by each of the 250 participating physicians. Registry data for non-participating physicians will serve as a mode of comparison (control group). This data will be used to establish a baseline against which the effectiveness of the educational interventions is measured. Data collection will focus on the following proposed quality measures (to be confirmed by faculty):

- *percentage of high-risk patients aged 19-64 who have documentation of receiving pneumococcal immunization.*
- *percentage of patients aged 65 years and older who have documentation of receiving pneumococcal immunization.*
- *percentage of high-risk patients aged 18-64 who have documentation of receiving seasonal influenza annually.*
- *percentage of patients aged 65 and older who have documentation of receiving seasonal influenza annually.*

Other independent variables will also be collected and cross tabulated against the above measures. Such variables may include, but aren't limited to: age, race/ethnicity, geographic area (rural vs. urban), type of facility (in which the physician practices), size of facility, socioeconomic factors, and percentage of patients insured by type.

Stage B: Intervention

Considerate of data collected as part of Stage A, faculty will construct a curriculum to deliver as part of an online educational intervention within the targeted physicians (N=250).

Participants who complete Stage A of the PI activity will be dynamically directed to a personalized learner portal that will showcase 3 targeted online activities and a collection of non-educational strategies/resources based on an assessment of their Stage A data.

For the online education, three topics will be developed, with 3 versions of each to accommodate 3 learner profiles. Each online activity consists of synchronized slides and audio and will address key assessment and management issues targeted to a specific learner profile for customized education.

Cleveland Clinic

Stage C: Data Collection and Reassessment

Patient-level data from the QA registry will be collected for all participating physicians after 6+ months of implementing new processes/protocols identified in Stage B.

Innovation

The proposed initiative will build off the current tracking of registry data for pneumococcal vaccination practices and introduce a new methodology for tracking influenza vaccination rates within the network as well as provide an action plan at the system level (5200 member providers of the QA and affiliates in Buffalo, NY area)to improve performance/quality targets.

Design of Outcomes Evaluation

The performance improvement platform to be used enables analysis at Moore's Levels 1 through 5. Further, each physician will assess and report on his/her respective performance against the identified quality measures at multiple points during the activity.

Success relative to the program goals will be established if the vaccination rate for patients in targeted primary care physicians improves over baseline. Improvement will be measured relative to each physician's individual vaccination practices, pre (Stage A) and post (Stage C) versus the control group (registry data), and aggregated vaccination practices of all participating physicians compared to national averages, and compared to quality targets (eg, 90%).

As outlined in the Intervention Design and Methods above, data will be drawn directly from each physician's patient records. Data will be collected from the QA's data registry, which houses patient records for all participating physicians. Engagement of the physician audience will be measured by the percentage of participants completing all three stages of the program.

The findings from the PI/QI activity will be written as an action plan for spreading the successful practices learned. It includes an assessment of resources required to provide optimal immunization practices, persons/staffing needed, time parameters and ongoing evaluation strategies to measure success. This paper will be submitted for publication in a peer-reviewed journal as well as disseminated by Cleveland Clinic's Community Physician Partnership amongst its membership and to other clinics nationwide.

Project Timeline

Pre-planning for the program will commence January 2014; Stage A is anticipated to run between May 2014 and January 2015; Stage B will run concurrently from May 2014 and extend through June 2015; Stage C data will be collected between July 2015 through December 2015 to coincide with peak vaccination periods; Assessment of program data will be completed by March 2015 and a publication will be submitted for journal review by April 2015.

Requested Budget

The total requested budget is $440,325.00

Cleveland Clinic

Organizational Detail

The Cleveland Clinic Center for Continuing Education

The Center is committed to sharing our long history of providing continuing medical education to a national and global audience of physicians, nurses, and other medical professionals. Accredited to provide continuing medical education for physicians by the Accreditation Council for Continuing Medical Education (with commendation for exemplary performance), the Center is one of the largest and most diverse academic CME providers in the world. *http://www.clevelandclinicmeded.com/welcome.htm*

The Cleveland Clinic Quality Alliance - Community Physician Partnership

The Cleveland Clinic Quality Alliance is a program that was conceived and launched by the Cleveland Clinic Community Physician Partnership in 2010. Its goal was and is to provide a framework for independent physicians and Cleveland Clinic physicians to collaborate in the provision of improved healthcare quality and value. The network interfaces with 4 EMR systems, 75 interfaced patient management systems, 1158 independent providers, and 5374 physician members. The Quality Alliance has developed an actionable patient registry for chronic disease management, age appropriate health screenings and vaccinations. The Quality Alliance has now also devolved an affiliation with an out of market affiliate in Buffalo NY. We expect that the QA will continue to develop other out of market affiliates with an interest in data sharing and quality improvement. *http://www.cccpp.org/yearinreview/default.html*

The Academy for Continued Healthcare Learning (ACHL)

ACHL will serve as the educational collaborator and logistics partner for the joint-sponsored initiative proposed herein. Responsibilities include faculty management, instructional design and data analysis, coordination of all interventions and education, and facilitation of a published manuscript. www.achlcme.org

The Cleveland Clinic Foundation
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