Getting with the Guidelines:
Managing Pediatric ADHD in Your Primary Care Practice
Educational Grant Request to Pfizer

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C. Main Section of Proposal
1. Overall Goal & Objectives
The primary goal of this proposal is to deliver ACCME and ABP MOC accredited training to pediatricians and primary care providers (PCPs) (particularly those in Patient Centered Medical Homes (PCMH)) in our study groups that will improve the care they provide to children and youth with Attention-Deficit/Hyperactivity Disorder (ADHD) by increasing their adherence to 2011 AAP ADHD guidelines. We will focus on four areas of training linked to a key objective and compare the results of such training to controls who have not received our training.

Areas of Training	Key Objectives
2011 AAP ADHD Guidelines	Learners will increase their knowledge about the 2011 AAP ADHD Guidelines
Self-Assessment of Practice Performance and Patient Outcomes	Learners will evaluate their adherence to the guidelines with respect to practice performance and patient outcome measures
ADHD Assessment and Treatment	Learners will increase the use of practice performance measures to assess and treat children and youth with ADHD which will lead to better patient outcomes
Office Work Flow	Practices will improve office work flow systems to enable the ADHD care team to provide guideline based care.

We will focus on teaching the following *practice performance measures* and *patient outcome measures* and we will use these measures to evaluate the impact of our training.

Practice Performance Measures	
Use of DSM criteria	Screening for coexisting conditions
Use of parent rating scales	Discussion of medical and non-medical treatments
Use of teacher rating scales	Follow-up visits to optimize treatment
Patient Outcome Measures	
Reduction of ADHD symptoms	
Reduced impairment	

Learners in the study groups will be provided a variety of training interventions delivering accredited and non-accredited content designed to achieve the key objectives. Formats will include: live (face-to-face) workshops, a Performance Improvement CME (PI CME) activity, webinars/conference calls, webcasts, accessibility to an ADHD Internet portal that will assist with treatment planning, sending scales, and collecting data, and a social networking site to promote continuous engagement with the curriculum. This variety of training options will accommodate the personal preferences of learners by offering content that will vary in format, scope, intensity, time required for completion, and accreditation type. Learners will be able to select the levels and types of training that they find most relevant to their needs.

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2. Technical Approach
      a. Current Assessment of Need in Target Area
          i. Literature Review and Gap Analysis

ADHD is the most frequent mental health condition that PCPs who treat children and youth must address. Parents report that approximately 9.5 percent of all school age children ages 4 to 17 years have been diagnosed with ADHD sometime in their lives (CDC, 2012). These children show impairments in academic, social, and family functioning, and, when older, in occupational performance and often have coexisting psychiatric and/or learning disorders.

How treatment is prescribed and managed has significant impact on patient outcomes. This was clearly demonstrated in the multisite Multimodal Treatment Study for Children with ADHD (MTA Cooperative Group, 1999). The MTA protocols for its experimental groups receiving medication (the Med and Comb groups) collected standardized parent and teacher rating scales before and after every follow-up visit, titrated medication rapidly to an optimized dose, used higher medication doses than community PCPs, mandated frequent follow up office visits, and for those in the Comb group paired medication with behavior management training. These protocols resulted in significantly better patient outcomes when compared to the outcomes of children with ADHD who were treated as usual by their community PCPs. Frequently monitored and carefully titrated medication treatment (informed by parent and teacher feedback) for children with ADHD, especially when combined with behavioral treatment, yielded the best outcomes. Furthermore, Epstein et al., (2007) found that pediatricians who utilized consultation services to guide their assessment and treatment of ADHD following the evidence-based AAP guidelines had better outcomes in their patients. Not only does adherence to guidelines provide best practices for diagnosis and treatment of ADHD, but also failure to do a comprehensive assessment may lead to missed diagnosis, inaccurate diagnosis and unnecessary or inappropriate treatment.

To guide ADHD care, the AAP recently revised and updated their 2001 guidelines (AAP, 2011; AAP, 2001; AAP 2011). These new guidelines offer physicians evidence-based recommendations for diagnosing and treating their patients with ADHD. New features include: extending the age range appropriate for PCPs to diagnose ADHD from ages 6-12 years to 4-18years; encouraging screening for coexisting emotional, behavioral, neurodevelopmental and physical disorders; and emphasizing a "Process of Care" consistent with a chronic care model.

While most pediatricians are familiar with the earlier AAP ADHD guidelines (Rushton et al., 2004) the recommended practices in the guidelines have not been reliably implemented in practice settings (Chan et al., 2005; Epstein et al., 2008, 2011; Gardner et al., 2004; Rushton et al., 2004, Wolraich et al., 2010; Brown et al.; 2011). For example, Chan et al. (2005) found that only 57% of pediatricians reported using formal criteria to diagnose ADHD and only 27% indicated that they adhered to DSM-IV-TR criteria. Brown et al. (2011) surveyed psychiatrists, pediatricians and other primary caregivers about their level of competence and self-reported performance regarding the care of children with ADHD. Only 40% of pediatricians (N=252) and 37% of other PCPs (N=203) knew that combination behavioral and pharmacologic treatment may be most useful for children with ADHD and a psychiatric comorbidity. Only 14% of

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pediatricians and 21% of other PCPs knew that 60-85% of children with ADHD would continue to meet ADHD criteria in their teenage years. The authors also recommended that physician education should include training on effective communication with the family to improve care for children with ADHD. Turbyville (2005) observed low rates of follow-up for 6-12 year-old children with a new ADHD medication prescription in commercial and Medicaid populations.

Determining the actual use of guideline measures in primary care settings for assessment and treatment of ADHD is somewhat difficult to do as there is variation from study to study depending on how you collect the information. PCPs self-reported use of measures has been found to be much higher than use documented in randomized patient chart reviews. In one study (Wolraich et al., 2010), pediatricians reported that they used formal criteria to diagnose ADHD 81% of the time and they routinely used teacher rating scales 67% of the time for initial assessment. However, randomized chart reviews (Epstein et al., 2011) show lower usage rates—e.g., 20% for use of parent scales and 14.5% for teacher scales in initial assessment; 0% for use of *DSM IV* criteria; and 0% for use of parent or teacher scales to monitor progress.

In September 2013, NACE surveyed a national sample of 209 PCPs who reported on their familiarity with and adherence to the 2011 AAP ADHD Guidelines. The results suggested substantial need for training on the care of children and adolescents with ADHD: only 29% reported that they were moderately or very familiar with the guidelines; 37% initiated evaluations for ADHD; 34% used DSM criteria in diagnosing ADHD; 35% screened for coexisting conditions; 28% & 40% suggested medication and/or behavior therapy for ages 6-11 and 12-18, respectively; and 44% titrated medication for maximum benefit and control of adverse effects. This survey shows significant gaps in knowledge and practice, but respondents expressed a desire to learn more. Sixty-five percent of these PCPs indicated it was very important that they learn about the guidelines and 80% indicated they would attend an accredited activity to do so.

Implementing the AAP ADHD guidelines in community practice is a complex process that requires specific, multi-faceted training (Langberg, J., 2009). Olson et al., (2005) found that prior to training, only 4% of clinicians and nurse practitioners diagnosing children adhered to all 4 AAP guidelines, compared to 82% after training (P < .001). Polaha et al., (2005) examined the use of a protocol for assessing ADHD in rural pediatric practices. Practices were not consistently collecting the comprehensive information recommended for an ADHD assessment. Parent and/or teacher rating scales were collected for only 0% to 21% of assessments across sites. After being provided with brief training and supporting materials, medical records reflected significant improvement in the ascertainment of clinically necessary ADHD information, with parent and teacher rating scales present 88% to 100% of the time. The integrity of protocol collection and management was maintained 2 to 3 years after training. . Epstein et al. (2008) noted that PCPs' *assessment* practices were more easily improved than *treatment* practices, however; issues around long-term management of patients with ADHD merit particular attention, in future efforts at improving PCPs' adherence to evidence-based ADHD guidelines.

Leslie et al. (2004) initiated the successful San Diego Attention-Deficit/Hyperactivity Disorder Project (SANDAP) which provided guideline training, assessment materials, and assistance with

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collection and scoring of rating scales to pediatric practices in San Diego, CA. The Partnerships for Quality project (Lannon et al., 2007) helped to close the gap between knowledge and care for children with ADHD by fostering a partnership between stakeholders.

The training programs that have been most successful have used a quality improvement model. Cincinnati Children's Hospital Medical Center (CCHMC) began an ADHD Collaborative in 2004 to train community-based physicians and their office staff to implement the AAP guidelines (Epstein et al., 2008). The CCHMC intervention team worked with the entire office staff to modify office systems to promote the systematic use of the AAP guidelines across the whole practice. Office physicians were informed about the rationale and implementation of the AAP prescribed guidelines. In-office training sessions trained ADHD care staff to modify their office work flow to include procedures for collecting ADHD rating scales, preparing written care management plans, and monitoring treatment response. Pre-training and post-training adherence to evidence-based practices was assessed through review of patient charts. Pre-intervention rates of guideline usage were uniformly low. After the intervention, use of parent and teacher rating scales increased from levels of 52%-55% to levels of nearly 100%. Systematic monitoring of responses to medication improved from a baseline level of 9% to 40%.

Epstein, et al. (2011) developed an Internet portal to automatize guideline training. Forty-nine community-based pediatricians at eight practices participated. Practices were randomly assigned to either receive the intervention immediately or placed on a wait-list to receive the intervention after a 6-month period. A random sampling of ADHD patient charts were was examined at baseline and 6-months. Intervention practices participated in a 4-session web conference training including didactic lectures and office flow modification workshops. Practices then used the ADHD web portal in clinical practice. Quarterly, physicians evaluated their practice behaviors using an online report card and completed a PDSA cycle to address underperforming areas. Results of the cluster randomized trial demonstrated that pediatricians in the intervention group significantly improved rates of many AAP-recommended ADHD care practice behaviors as compared to the control group. For example, rates of collection of parent- and teacher-ADHD ratings during assessment increased from 20.0% and 14.5% at baseline, respectively, to 42.0% and 36.3%, respectively, after six months of intervention. Rating scales collection continued to increase when assessed at 15-months post-baseline (70.2% for parent ratings; 50.6% for teacher ratings). Rates of using DSM-IV ADHD criteria during an assessment went from 0% at baseline to 47.3% at six month follow-up. Rates of using ADHD rating scales to monitor treatment response went from 0% for parents and teachers to 48.2% for parent ratings and 38.7% for teacher ratings. Moreover, the ADHD web portal was very efficient for the collection of parent and teacher rating scales. The median time to complete ADHD ratings was two days for parents and three days for teachers. However, the ADHD web portal did not measure evidence of shared decision-making.

Recently, physician-parent interactions and physician communication skills have been highlighted as areas of significant importance for effective implementation of shared decision-making (SDM). The Increased PCP understanding of parents' knowledge and beliefs about the causes of ADHD, their need for education about ADHD as a chronic condition, their goals for

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treatment and their treatment preferences and concerns has been shown to influence productive interactions between parents and PCPs (Brinkman and Epstein, 2011). Fiks et al. (2011) found that parents and PCPs both viewed SDM positively, but had different views of the purpose of SDM (i.e., a partnership between equals vs. a means to encourage families to accept clinicians' preferred treatment). The authors recommended that clinician training include strategies to facilitate communication.

Low adherence rates to medical treatment of ADHD has become a significant concern, if we hope to improve long-term outcomes of children with ADHD (Adler and Nierenberg, 2010). Parental decisions about treatment appear to be based on many factors, and a parent's decision to pursue medical treatment for ADHD appears to be a conflicted choice. Coletti et al. (2012) described a complex decision-making process when parents chose to initiate a clinical trial of ADHD medications. Brinkman et al. (2009) described "parental angst" in the decision-making process about treatment choices, and cited parental self-doubt and blame, daily struggles with their ADHD child, pressures from school, conflict between parents and a heavy emotional burden for parents as frequent themes that provide the context in which treatment decisions are made and revisited, over time, and may explain, in part, the low adherence rates seen in long-term ADHD treatment. Brinkman et al. recommended that PCPs develop better strategies to support families across the continuum of decision about ADHD treatment that parents will have to make and revisit over many years. Davis et al. (2012) recommended that the Medical Home model for ADHD needed to "develop approaches that explicitly focus on identifying family knowledge gaps, values and perspectives, and incorporating education and communication strategies into standard care…".

Gaps Analysis
- Unfamiliarity with 2011 AAP ADHD Guidelines and changes in the DSM V criteria
- Insufficient use of *DSM* criteria in making a diagnosis of ADHD (Hopkins, 2005)
- Insufficient use of appropriate assessment tools (Epstein et al., 2008)
- Inadequate/inefficient office flow procedures and systems (Leslie et al., 2004)
- Insufficient follow-up care to assess and monitor treatment effects (Turbyville, 2005)
- Lack of shared decision making between stakeholders (Langberg et al., 2009)
- Inadequate familiarity with community resources for ADHD care
- Attitudes of providers regarding responsibility for ADHD care (Stein et al., 2009)
- Shortage of pediatric specialists in some communities

Barriers to Care
- Insufficient time available to clinicians for appropriate assessment and treatment
- Inadequate training about ADHD assessment scales and treatments (Leslie et al., 2004)
- Low adherence to ADHD treatment rates by families
- Poor understanding of age- and gender-related issues in assessment and treatment
- Difficulty in communicating with teachers/schools about treatment outcomes
- Inadequate office practices to improve adherence with the guidelines
- Cost of care, particularly when multi-modal treatment is needed

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- Poor reimbursement for treatment
- Location of practice can influence ADHD care (Stein et al., 2009)

Underlying Needs to Narrow or Close Gaps
- Training in the 2011 AAP ADHD Guidelines
- Access to initial assessment tools
- Access to treatment tools focusing on medication treatment and behavior management
- Efficient office procedures to enable implementation of QI measures
- Tools to support shared decision making and ways to improve communication
- Planning that considers ADHD a chronic condition requiring on-going treatment, requiring a clear plan for short- and long-term follow-up and communication.
- Access to patient education opportunities and community resources
- Access to cost-effective and accessible mental health services

Knowledge Based Objectives.
- Describe existing guidelines and best practices for ADHD care in children ages 4-18
- Evaluate current practice behavior and confidence with respect to diagnosing and treating children with ADHD
- Identify evidence-based tools to evaluate symptoms, level of impairment, and relevant history in patients ages 4-18 suspected of having ADHD
- Identify risks for coexisting conditions in patients with ADHD ages 4-18
- Identify appropriate medication treatments and non-medication treatments
- Discuss and implement appropriate treatment monitoring and follow-up care
- Identify community resources to enhance ADHD care

Quality Improvement/Performance Based Objectives.
- Demonstrate the implementation of the AAP ADHD guidelines through increased use of practice performance measures
- Demonstrate the use of DSM criteria in making a diagnosis of ADHD
- Demonstrate use of parent and teacher scales for initial assessment and follow-up
- Demonstrate screening for coexisting conditions
- Demonstrate use of multi-modal treatment when indicated
- Demonstrate changes in office work flow made to improve ADHD care in their practice
- Demonstrate shared decision making with patients and families
- Demonstrate strategies to optimize treatment and follow-up within chronic care model
- Demonstrate the use of a collaborative consultation with community specialists

ii. Primary Audience Targeted for These Interventions
We will recruit 400-600 PCPs primarily working in PCMHs for our live workshops. Workshops will be held in cities within states that have a higher than average prevalence of ADHD diagnosis in children such as: Delaware, Florida, Indiana, Maryland, Missouri, North Carolina, and Ohio. There may be over-diagnosis of ADHD in these states and a need for guideline-based assessment. In at least two cities,the workshops will be streamed live for viewing at remote locations.   We will recruit another 400-600 PCPs (who may not have attended a live workshop)

to register for other training interventions: enduring activities (webcasts); online PI CME activity; or an ADHD Internet portal activity. We will make an effort to recruit practitioners for training that are recognized by NCQA as working in Patient Centered Medical Homes (PCMH), however, PCPs in settings not so recognized may also participate. We will recruit control groups of PCPs from those who register for these activities but who do not start them and we will collect outcome data from members of these control groups to compare with our study groups.

b. **Intervention Design and Methods**

Learners will be offered five different training interventions delivering ACCME accredited content designed to achieve program objectives. One of our interventions, an ADHD Internet portal—myadhdportal.com, is approved by the ABP for Maintenance of Certification Part IV. One non-accredited intervention will house downloadable tools (assessment and monitoring forms, behavior management worksheets, etc.) to assist practices. Formats will include live (face-to-face) workshops, a 3-stage PI CME Internet activity, an ADHD Internet portal activity (myadhdportal.com), Experts-on-Call webinars and conferencing, and enduring webcasts. These choices will accommodate personal preferences of learners by providing content that will vary in format, scope, time required for completion, and accreditation type (*AMA PRA Category 1 Credit*™ and MOC).

1. Live Workshop Training in Eight Cities

Start Date: 4/25/14   End Date: 2/14/15

This accredited workshop uses a didactic model of instruction to address the needs of PCPs to become familiar with the updated AAP guidelines, use of assessment instruments, available medical/non-medical treatments, and office work flows. This will narrow or close gaps in knowledge, competence, and performance. Studies have shown that training of this nature is an important component in improving adherence to guidelines.

Proposed Agenda for Workshop	
8:00-8:20	Introduction, Registration on Mobile Devices on the PI CME/ADHD Portal and review Stage A—Pre-Assessment of Your Practice
8:20-8:50	New Findings in Our Understanding of ADHD in Children and Youth
8:50-9:20	Review of AAP Assessment Guidelines and Office Work Flow
9:20-9:50	Review of AAP Treatment Guidelines and Office Work Flow
9:50-10:00	Morning Break
10:00-10:30	Pharmacologic Treatments for ADHD and Shared Decision Making
10:30-11:00	Non-Medical Treatments for ADHD and Shared Decision Making
11:00-11:30	How to Use the ADHD Internet Portal
11:30-11:45	Moving Through the Stages of the PI CME
11:45-Noon	Questions and Discussion

Proposed Locations and Dates

In our selection we considered prevalence of ADHD diagnosis, # pediatricians, and # PCMHs.

Proposed City, State	Proposed Date	Venue	% ADHD Dx in State**	# Peds in 75 Mile Radius	# State PCMH***
St. Louis, MO	04/25/14	Hyatt Regency St. Louis	10.8	1249	326
Baltimore, MD*	05/03/14	Hyatt Regency Baltimore	11.9	6012	481
Wilmington, DE	06/14/14	Marriott Wilmington	14.1	5780	42
Indianapolis, IN	09/06/14	Indianapolis Marriott	13.2	1135	111
Fort Lauderdale, FL*	09/20/14	Fort Lauderdale Marriott	11.6	2312	592
Nashville, TN	10/11/14	Nashville Airport Marriott	11.3	1001	352
Tampa, FL	11/08/14	Hilton Tampa Downtown	11.6	1406	692
Raleigh, NC*	02/14/15	Raleigh Marriott City Ctr	15.6	1961	625

* *Simulcasted-Live Streaming   ** # PCMH in State (NCQA)   *** CDC 2007 Data*

2. Enduring Webcasts   Start Date: 05/15/14   End Date: 12/31/15

Live workshop described above will be recorded and edited for on-demand viewing as ACCME accredited enduring webcasts. Learners will be trained on updates in ADHD research and practice; 2011 AAP ADHD guidelines pertaining to assessment and treatment; pharmacologic and non-medical treatments for ADHD; improving office work flows; use of the ADHD Internet portal; and how to complete the PI CME activity.

3. Experts-on-Call Webinars   Start Date: 04/27/14   End Date: 12/31/15

Experts-on-Call leaders work with practice staff and will review and reinforce best practices, explain the use of assessment and treatment tools for use with patients, help problem solve issues in office work flows, motivate the team for optimal results, and discuss data collection with respect to the practice performance and patient outcome measures. Coordinators will provide personal phone support to practices and a social networking site will host blogs and forums for learners who want to share their ideas and results with other practice leaders.

- Experts-on-Call Webinar I: Implementing an ADHD Assessment Strategy in Your Practice
- Experts-on-Call Webinar 2: Implementing an ADHD Treatment Strategy in Your Practice

4. Performance Improvement CME Activity Start Date: 04/25/14   End Date: 12/31/15

An accredited (20 *AMA PRA Category 1 Credits*™) 3 stage Performance Improvement CME (PI CME) model will be delivered online and will be combined with accredited training interventions: live workshops, use of an ADHD Internet portal, enduring webcasts, and Experts-on-Call training. This web platform will deliver content, link to assessment and treatment tools and resources, and collect data on the measures. Stage A (pre-assessment and education) is where learners do a self-assessment regarding their use of specific practice performance measures and select different training programs. Stage B (action stage) is where learners will implement what they have learned about their practice. Stage C (post-assessment) is where learners will be re-evaluated for changes in their use of specific measures in daily practice.

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5. ADHD Internet Portal   Start Date: 04/25/14   End Date: 12/31/15
Purpose: The myADHDportal.com is approved by the American Board of Pediatrics (ABP) for Maintenance of Certification Part IV. This platform addresses the needs of PCPs to implement many of the procedures described in the guidelines and stores the performance and outcome measures that are the focus of our training: use of DSM for diagnosis, use of Vanderbilt Rating Scales delivered electronically to parents and teacher with automatic reporting and interpretation of results, recommendations for treatment planning including medical and non-medical treatments, monitoring of treatment using follow-up Vanderbilt Rating Scales, and ways to manage office work flows. In addition, the portal contains online webcasts to address gaps in knowledge and competency of learners needing to learn about the guidelines and how to implement them in their practice setting. The ADHD Internet portal will narrow or close gaps in knowledge, competence, and performance and will provide level 5 QI data for outcome measurement. Studies have shown that training of this nature is an important component in improving adherence to guidelines that can lead to improved patient outcomes.

6.   Non-Accredited Patient Education Material Start Date: 04/25/14   End Date: 12/31/15
Purpose: A website will be created (proposed url: www.adhdcareteam.com) to house patient education materials from CHADD, informational resources, and social networking that will encourage communication amongst caregivers. Resources will include validated rating scales, behavioral strategies and behavior management worksheets for children and youth, study strategies worksheets, family communication worksheets, organization tips, reading lists, links to other helpful sites, etc. These resources will be available for download by practices.

   c. **Evaluation Design**
        i. Data Collection and Analysis   ii. Expected Amount of Change
Each training intervention will provide different data sets as described below. All statistical data analyses will use STATA 13.0. Where appropriate, analyses of pre-test data will start with descriptive statistics to describe the distribution of demographic features, subjective, self-assessed competency, confidence scores and objective questionnaire scores. The general linear model will compare pre- and post-training measures using the distributional family and link function appropriate to the scale of the data. This method will also allow us to assess the effects of demographic feature, confidence scores and method of assessment (self vs. chart review) on change scores yielding level 5 and 6 outcome data (Moore, 2009). Control groups will be established for the following training interventions: live workshops, PI CME activity, and ADHD Internet portal activity. Members of the control groups will be composed of a randomly collected sample of clinicians who registered for each of these training activities but who did not start the activity. Einstein will also include PCPs and pediatricians who have opted in to receive this information but have not participated in the activities.

1. Outcome Evaluation Plan for Live Workshops in Eight Cities and Simulcasts
   - The demographics of the participants and to what degree the learning objectives were effectively addressed, content was evidence based, content was unbiased, faculty was effective at teaching, etc. (Moore's Levels 1/2)

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- Changes in learners' declarative and procedural knowledge of ADHD assessment and treatment and the guidelines (Moore's Levels 3A/3B)
- Changes in competence using case-based vignettes and questions linked to learning objectives (Moore's Level 4)
- Maintenance of learning four weeks after the activity using the same pre and post-test questions delivered during the presentations (Moore's Levels 3A/3B)
- Intention to implement performance measures linked to objectives (Moore's Level 5)
- Shifts in learners' readiness to make changes in their thinking or behavior related to Prochaska's stages of change model

2. Outcome Evaluation Plan for Enduring Webcasts Online
- The demographics of the participants and to what degree the learning objectives were effectively addressed, content was evidence based, content was unbiased, faculty was effective at teaching, etc. (Moore's Levels 1/2)
- Changes in learners' declarative and procedural knowledge of ADHD assessment and treatment and the guidelines (Moore's Levels 3A/3B)
- Changes in competence using case-based vignettes and questions linked to learning objectives (Moore's Level 4)
- Intention to implement performance measures linked to objectives (Moore's Level 5)
- Shifts in learners' readiness to make changes in their thinking or behavior related to Prochaska's stages of change model

3. Outcome Evaluation Plan for Experts-on-Call Activity
- The demographics of the participants and to what degree the learning objectives were effectively addressed, content was evidence based, content was unbiased, faculty was effective at teaching, etc. (Moore's Levels 1/2)
- Participant satisfaction with the activity (learning objectives met, bias, evidence-based information presented, etc.)
- Post activity data on questions related to management of office work flow systems and use of practice performance measures by the ADHD care team

4. Outcome Evaluation Plan for PI CME Activity Online
The sources of data for learners in the study group completing the PI CME activity and controls will be: self-report and chart audit data collected before and after training on practice performance measures and patient outcome measures (below). Data will be collected using ARS and/or mobile devices at workshops. For learners completing enduring activities outside the PI CME activity, pre/post questions will be asked regarding use of these measures and intention to use them as a result of the training.   Below is an estimate of expected improvement in use of measures we expect after training (Stage C).

Practice Outcome Measures	Improvement in Use of Measure From Stage A to Stage C
Use of parent rating scales at initial assessment	>25%

Use of teacher rating scales at initial assessment	>25%
Use of DSM ADHD criteria at initial assessment	>25%
Use of procedure/scale to screen for coexisting conditions	>25%
Recommendation of non-medical treatments (i.e., counseling, child management training, educational assistance)	>25%
Use of parent rating scale to monitor treatment responses within 6-weeks of medication initiation	>25%
Use of teacher rating scale to monitor treatment responses within 6-weeks of medication initiation	>25%
For those with at least 30 days of treatment, number of visits/contacts during 1st month to titrate medication	>25%

Patient Outcome Measures	Improvement in Outcome Measure From Stage A to Stage C
% decrease in total ADHD symptom scores on most recently obtained parent rating scale follow-up (i.e., Vanderbilt)	>25%
% decrease in total ADHD symptom score on most recently obtained teacher rating scale follow-up (i.e., Vanderbilt)	>25%
% of patients with improvement or normalization in all areas of impairment on most recently obtained parent rating scale follow-up (i.e., Vanderbilt)	>25%
% of patients with normalization in all areas of impairment on most recently obtained teacher follow-up scale (i.e., Vanderbilt)	>25%

5. Outcome Evaluation Plan for ADHD Internet Portal

Based on findings of Epstein et. al. (2011) we anticipate the following improvements from baseline to three month follow-up from learners in our study group who are using the ADHD Internet portal—myadhdportal.com.

Use of Practice Performance Measures after Three Months	Baseline	3-months
% of newly assessed patients evaluated with parent rating scale	55%	100%
% of newly assessed patients evaluated with teacher rating scales	52%	94%
% of newly assessed patients meeting DSM criteria for ADHD	38%	77%
% of newly diagnosed patients with a written care management plan	1%	100%
% of newly diagnosed patients with office contact within 14-days of medication initiation	27%	86%
% of newly diagnosed patients with an office follow-up within 6 weeks of medication initiation	52%	89%
% of newly diagnosed patients with **follow-up** rating scales completed by parent within 6 weeks of medication initiation	9%	66%
% of newly diagnosed patients with **follow-up** rating scales completed by teacher within 6 weeks of medication initiation	9%	63%

iii. Audience Engagement

Methodology to assess audience engagement will vary with the type of intervention.

Metrics to Assess Audience Engagement

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Live Workshop (8 cities)	# Registered, % Responding to ARS % Registering for PI CME activity at workshop Self-report survey data about the activity
Enduring Webcasts	# Registered for each webcast, % Completed for each webcast Self-report survey data for each webcast
Experts-on-Call Webinars	Self-report survey data about the activity
PI CME	# Registered, % Completed each stage Self-Report survey data about the activity
ADHD Internet Portal	# Subscribers, # Patients tracked

iv. Dissemination

Results of the activity will be submitted for publication in *CE Outcomes* and will be presented at annual meetings of CHADD, ACEHP, APSARD, AAP, and other relevant meetings.

3. Detailed Workplan and Deliverables Schedule

The following work teams will be assembled.

Team	Responsibilities
Accreditation/Compliance Team	Ensure ACCME and MOC policies followed
Content Development Team	Develop content for all training activities
Faculty Coordination Team	Organize faculty documentation, training, travel/lodging
Event Planning Team	Organize arrangements with venues, registration, follow up
Outcome Research Team	Outcome methodology, data analysis and reporting
Marketing/Audience Gen. Team	Develop/deploy marketing materials, liaise with partners
Web Development Team	Develop/maintain web sites and NACE learning mgt system

Major Milestones
- 02/15/14—Faculty selected, web development/event planning completed
- 03/01/14—Educational content completed; marketing/advertising agreements done
- 04/15/14—Launch of workshops, PI CME, ADHD Internet portal, and Experts-on-Call
- 05/24/14—Metrics/evaluation reports prepared for first workshop (others to follow)
- 05/10/15—Final outcomes report for workshop and Experts-on-Call activities
- 10/15/15—Metrics report for ADHD Internet portal; final outcomes for PI CME activity

Deliverables Schedule	Date
Metrics/Evaluation Report—All Live Workshops	04/24/15
Final Outcomes Report—All Live Workshops in Eight Cities and Experts-on-Call	05/10/15
Final Outcomes Report—PI CME Activity	10/15/15
Preliminary Metrics Report—ADHD Internet Portal	04/15/15
Final Metrics Report—ADHD Internet Portal	10/15/15
Submission for Presentation at CHADD Conference 11/14 and ACEHP 1/15	06/01/14
Submit manuscript to *CE Measure* for Publication of *Getting to Guidelines* Study	11/30/15

D. Organizational Detail

This submission is the result of the collaboration of four organizations: Albert Einstein College of Medicine of Yeshiva University/ Montefiore Medical Center, Einstein Montefiore Center for

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Continuing Medical Education (Einstein), National Association for Continuing Education (NACE), American Professional Society for ADHD and Related Disorders (APSARD), and Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD).

Our coalition comes from the disciplines of pediatrics, psychiatry, clinical psychology, medical education, and ADHD patient advocacy. Our collective clinical expertise, experience in developing content for accredited activities, outcomes research, and record of publications in the area of ADHD is unsurpassed. Beyond teaching the AAP guidelines, our coalition has the expertise to develop content to help learners understand issues such as: complexities in diagnosing and treating the 4-6 year old child with ADHD, benefits of incorporating elements of the chronic care model into office practice, managing children with ADHD who have coexisting condition, titration concerns and strategies, indices of impairment and quality of life, adherence to treatment, and other important topics.

APSARD, NACE, and CHADD have collaborated in the past to produce ADHD related educational activities to PCPs and specialists. In 2013, these organizations were key participants in a grant award from Agency for Healthcare Research and Quality (AHRQ) for a three-year CME and dissemination project on adult ADHD for PCPs. In 2010-2011, APSARD, NACE and CHADD produced a very successful accredited PI CME activity, *Adults with ADHD: Making Exam Room Decisions*, for PCPs and held live symposia in 8 cities educating over 1,600 PCPs.

Albert Einstein College of Medicine of Yeshiva University /Montefiore Medical Center, Einstein Montefiore Center for Continuing Medical Education
Albert Einstein College of Medicine of Yeshiva University is one of the nation's premier institutions for medical education, basic research, and clinical investigation. For more than 5 decades, Einstein has exemplified excellence in medical research, teaching, and patient care. Eleven of its programs are designated as National Institute of Health "Centers of Excellence".

Montefiore Medical Center is the University Hospital for Albert Einstein College of Medicine. Montefiore is a premier academic medical center nationally renowned for its clinical excellence, scientific discovery and commitment to its community. With six hospitals and 2,059 beds, Montefiore is an integrated health system seamlessly linked by advanced technology. State-of-the-art primary and specialty care is provided through a network of more than 150 locations across the region. Montefiore's partnership with Einstein advances clinical and translational research to accelerate the pace at which new discoveries become the treatments and therapies that benefit patients. The medical center derives its inspiration for excellence from its patients and community, and continues to be on the frontlines of developing innovative approaches to care.

The Einstein Montefiore Center for Continuing Medical Education is a joint office of the Albert Einstein College of Medicine of Yeshiva University and Montefiore Medical Center and was founded in 1976. It is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide CME for physicians and in July 2009 was granted "Accreditation with Commendation." CCME is committed to the utilization of resources for the advancement of

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CME throughout the physician's professional career. CCME's mission is to enhance patient care by bringing diagnostic and therapeutic innovations to the clinical environment through professional medical education for physicians that maintains, develops, and increases their knowledge, skills, and competence.

Independence

CCME does not maintain financial relationships with commercial supporters or educational partners outside of the receipt of normal fee for services. Commercial interests are not involved in the development of content, program planning, or budget determination. Responsibility for assuring that the CME activities meet the highest requirements and standards of Einstein and the ACCME rests solely with the CCME and is not transferable.

Disclosure and Conflict of Interest

All faculty must be cleared by verification with the Office of Inspector General (OIG) Exclusions List and the FDA Debarment List. Einstein fosters faculty development skills by requesting that all those participating in our activities complete the National Faculty Education Initiative (NFEI) program. Einstein requires written, signed disclosure of the existence of relevant financial interests or relationships with commercial interests from any individual contributing to or in a position to influence the content of a CME activity sponsored by Albert Einstein College of Medicine. Individuals not disclosing relevant financial relationships will be disqualified from any association with the CME activity in question. Einstein has established policies that will identify and resolve all conflicts of interest prior to activity certification by applying the disclosed information and activity subject to CCME's policies. All reviewers, faculty, and individuals in a position to influence content will be properly vetted so that any conflicts of interest are resolved per Einstein's Policy on Conflict of Interest. No person whose conflicts of interest are irresolvable will be allowed to participate in the activities.

Content Validation

All scientific research referred to, reported on, or used in a CME activity certified by Einstein in support or justification of a patient care recommendation will conform to the generally accepted standards of experimental design, data collection, and analysis.

The National Association for Continuing Education (NACE) (www.naceonline.com) is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians. NACE has delivered accredited medical education to primary care providers for over a dozen years and annually educates over 10,000 physicians, nurse practitioners and physician assistants through live and enduring CME activities. NACE's Director of Continuing Education, Harvey C. Parker, Ph.D., is the founder of Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD). NACE has had a strong interest in providing education to HCPs in the area of ADHD and educated over 1600 PCPs in 2010-11 on diagnosis and treatment of adult ADHD. NACE is well qualified to address the topic of pediatric ADHD and understands the importance of providing training in this area and has the ability to recruit experts to deliver such training.

The American Professional Society of ADHD and Related Disorders (APSARD) (www.apsard.org) is an international organization consisting of a broad spectrum of physicians and other allied mental health experts working to improve the quality of care for patients with

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ADHD through the exchange of research, best practices and evidence-based insights. Members of APSARD come from a variety of disciplines and specialties including primary care physicians, pediatricians, psychiatrists, neurologists, psychologists, and educators. Many APSARD members are the "Who's Who" of ADHD experts in the U.S.

Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD) (www.chadd.org), is a national non-profit, tax-exempt (Section 501(c)(3)) organization providing education, advocacy and support for individuals with ADHD. CHADD was formed in 1987 and is the premier ADHD advocacy organization in the country.

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Appendix C
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