

NAECB



NATIONAL
ASTHMA EDUCATOR
CERTIFICATION BOARD

AE-C

CERTIFIED
ASTHMA
EDUCATOR
AE-C

CANDIDATE HANDBOOK



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ABOUT NAECB

The National Asthma Educator Certification Board, Inc. (NAECB) is a voluntary health certifying board created in 2001 to evaluate the professional competence of asthma educators. The primary purposes of the NAECB are to prepare and conduct examinations to test the qualifications of candidates for certification as asthma educators.

The NAECB is governed by no less than 9 and no more than 17 voting members. The Directors represent the multiple disciplines involved in asthma education, counseling, and coordination of care and include at least

- one (1) behavioral scientist;
- one (1) health educator;
- one (1) nurse;
- one (1) pharmacist;
- one (1) physician; and
- one (1) respiratory therapist.

Representation is by discipline and competency, not by organizational membership. The Board of Directors also includes a Public Member and an At-Large Member.

NAECB's Mission: *To promote optimal asthma management and quality of life among individuals with asthma, their families and communities, by advancing excellence in asthma education through the Certified Asthma Educator process.*

Asthma Educator Definition: *An asthma educator is an expert in teaching, educating, and counseling individuals with asthma and their families in the knowledge and skills necessary to minimize the impact of asthma on their quality of life. The educator possesses comprehensive, current knowledge of asthma pathophysiology and management including developmental theories, cultural dimensions, the impact of chronic illness, and principles of teaching-learning. The educator is knowledgeable about objective and subjective evaluations used to diagnose asthma and assess its control. The educator capably instructs individuals with asthma on the optimal use of medications and delivery devices particularly explaining technical concepts to individuals in language each can understand. The educator conducts thorough assessments of individuals and families to identify strengths and resources as well as negative psychological factors, the social and economic impact of asthma, educational needs, and barriers to optimal health-care and self-management. The educator works with an individual with asthma, his/her family, and other healthcare professionals to develop, implement, monitor, and revise an asthma action plan customized to the individual's needs, environment, disease severity, and lifestyle to optimize the individual's self-management skills. The educator monitors asthma education program outcomes and recommends modifications to improve quality and effectiveness. The educator serves as a resource to the community by providing information about asthma as well as healthcare and community resources.*

A primary job responsibility of the certified asthma educator is the provision of asthma coordination and counseling services.

ABOUT THIS HANDBOOK

This handbook provides information that you will need to register for the NAECB Examination, including eligibility requirements, examination policies, an examination content outline and an examination application. Be sure to keep the handbook until you take the examination; you may wish to refer to it later.

TESTING AGENCY

The NAECB has contracted with PSI Services to assist in the development, administration, scoring and analysis of its examination. PSI services also include the processing of examination applications and the reporting of scores to candidates who take the examination.

STATEMENT OF NONDISCRIMINATION

The NAECB does not discriminate among candidates on the basis of age, gender, race, color, religion, national origin, disability or marital status.

ELIGIBILITY REQUIREMENTS

Individuals may be admitted to the examination based on either of the two following qualifications:

1. The following U.S.* currently licensed or credentialed health care professionals may be admitted to the examination:
 - Physicians (MD, DO)
 - Physician Assistants (PA-C)
 - Nurses (RN, LPN, NP)
 - Respiratory Therapists (RRT, CRT)
 - Pulmonary Function Technologists (CPFT, RPFT)
 - Pharmacists (RPh)
 - Social Workers (CSW)
 - Health Educators (CHES)
 - Physical Therapist (PT)
 - Occupational Therapist (OT)
2. Individuals providing direct patient asthma education, counseling or coordinating services with a minimum of 1000 hours experience in these activities.

* Those candidates without an active U.S. license or credential will only be allowed to take this examination if they meet the criteria set forth in #2 (1000 Hours).

The NAECB reserves the right to verify eligibility requirements.



EXAMINATION ADMINISTRATION

The NAECB Examination is delivered by computer at approximately 300 PSI Test Centers geographically located throughout the United States. There are no application deadlines and a candidate who meets eligibility requirements may submit an application and fee at any time. The examination is administered by appointment only Monday through Saturday. Appointment starting times may vary by location. Candidates are scheduled on a first-come, first-served basis.

EXAMINATION FEES

You must submit the appropriate fee with a complete examination application according to the following schedule. Payment may be made by credit card (VISA, MasterCard, American Express or Discover), cashier's check or money order made payable to PSI Services Inc. **Cash, company and/or personal checks are not accepted. All fees are non-refundable and non-transferrable.**

Application Status	Location of Candidate	
	United States	U.S. Territories and Outside the U.S.
First attempt	\$350	\$495
Repeat attempt	\$250	\$395
Recertification	\$300	\$445

TEST CENTER LOCATIONS

A current list of Test Centers can be viewed at www.goAMP.com. Specific address information will be provided when a candidate schedules an examination appointment.

SPECIAL ARRANGEMENTS FOR CANDIDATES WITH DISABILITIES

NAECB and PSI comply with the Americans with Disabilities Act and strive to ensure that no individual with a disability is deprived of the opportunity to take the examination solely by reason of that disability. PSI will provide reasonable accommodations for candidates with disabilities.

Wheelchair access is available at all established test centers. Candidates with visual, sensory or physical disabilities that would prevent them from taking the examination under standard conditions may request special accommodations and arrangements. To request special accommodations, complete the two-page REQUEST FOR SPECIAL EXAMINATION ACCOMMODATIONS form

included in this handbook and submit it with your application and fee at least 45 business days prior to your desired examination date. Please inform PSI of your need for special accommodations when scheduling your examination.

APPLYING FOR AN EXAMINATION

THE APPLICATION PROCESS

There are two ways to apply for the NAECB Examination after eligibility requirements are satisfied. All candidates may access the application process through the NAECB at www.naecb.org. Applications that are incomplete will be returned, along with any fees submitted minus a \$50 processing fee.

1. **Online Application/Scheduling:** You may complete the application and scheduling process in one online session by visiting www.naecb.org and selecting **Examination Application**. The computer screens will guide you through the complete process. After the application information and payment using a credit card (VISA, MasterCard, American Express, Discover) have been submitted, eligibility will be confirmed or denied and you will be prompted to schedule an examination appointment or supply additional eligibility information. If special accommodations are being requested, please contact PSI at 888-519-9901.

OR

2. **Paper Application and Scheduling:** Complete and submit to NAECB/PSI the paper application included in this handbook and appropriate fee (credit card, cashier's check or money order). A paper application is considered complete only if all information requested is complete, legible and accurate; if the candidate is eligible for the examination; and if the appropriate fee accompanies the application.

NAECB and PSI will process the paper application and within approximately two weeks will send a confirmation notice including a website address and toll-free telephone number to contact PSI to schedule an examination appointment (see table below).

If you contact PSI by 3:00 p.m. Central Time on...	Your examination may be scheduled as early as...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday (Saturday if open)
Thursday	Monday
Friday	Tuesday



Be prepared to confirm a location and a preferred date and time for testing and to provide your Social Security number as a unique identification number. If a confirmation notice is not received within 4 weeks, contact NAECB/PSI at 888-519-9901. When you call to schedule an appointment for examination, you will be notified of the time to report to the Test Center. Please make a note of it because you will NOT receive an admission letter.

Your application is valid for one year, during which you must schedule an appointment to test on the computer and take the examination. If you fail to schedule an appointment within the one-year eligibility period, you will forfeit the application and all fees paid to take the examination. A complete application and examination fee are required to reapply for examination. You are allowed to take only the examination for which application is made and a confirmation notice is received. **Unscheduled candidates (walk-ins) are not tested.**

EXAMINATION APPOINTMENT CHANGES

You may reschedule an appointment for examination at no charge **once** by calling PSI at 888-519-9901 **AT LEAST TWO BUSINESS DAYS** prior to the scheduled examination session. (See following.)

If your Examination is scheduled on...	You must contact PSI by 3:00 p.m. Central Time to reschedule the Examination by the previous...
Monday	Wednesday
Tuesday	Thursday
Wednesday	Friday
Thursday	Monday
Friday	Tuesday

If you wish to reschedule an examination but fail to contact PSI at least two business days prior to the scheduled examination session, reschedule a second time, appear more than 15 minutes late for an examination and cannot be seated, or fail to report for an examination appointment, you will forfeit the application and all fees paid to take the examination. A complete application and examination fee are required to reapply for examination.

EXAMINATION CONTENT

The examination is based upon four major content areas. Each of the content areas is briefly described and followed by an outline of the topics included in the area. In addition, the number of examination questions devoted to each major content area is noted. The examination is composed of 175 questions (150 scored questions, 25 pretest questions). Performance on the pretest questions does not affect your score. The pretest questions are not identified.

The Detailed Content Outline on pages 5-11 is in effect for candidates testing through August 31, 2018. A new Detailed Content Outline will apply for candidates testing beginning September 1, 2018. Please see Appendix A at the back of this handbook for the NAECB Examination Specifications Effective 09/01/2018.

Each question on the examination is categorized by a cognitive level that a candidate would likely use to respond. These categories are:

1. Recall (RE): The ability to recall or recognize specific information is required.
2. Application (AP): The ability to comprehend, relate or apply knowledge to new or changing situations is required.
3. Analysis (AN): The ability to analyze and synthesize information, determine solutions and/or to evaluate the usefulness of a solution is required.

<i>Effective through August 31, 2018</i> Major Category	Percentage of Examination Questions
I. The Asthma Condition	20%
II. Patient and Family Assessment	26%
III. Asthma Management	43%
IV. Organizational Issues	11%



CERTIFICATION EXAMINATION FOR ASTHMA EDUCATORS DETAILED CONTENT OUTLINE

Effective through August 31, 2018

Open cells show an examination could include items from indicated cognitive levels. Shaded cells prevent appearance of items on examinations.

	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
I. THE ASTHMA CONDITION	9	20	1	30
A. Pathophysiology	4	6	0	10
1. Teach an individual with asthma and their family using simple language by illustrating the following with appropriate educational aids				
a. normal pulmonary anatomy and physiology				
b. alterations in lung anatomy and physiology that characterize asthma e.g., <ul style="list-style-type: none"> • inflammation • bronchial hyperresponsiveness • bronchial wall edema • excess mucous secretion • smooth muscle contractions 				
c. immediate and potential long-term sequelae of airway inflammation e.g., <ul style="list-style-type: none"> • hyperresponsiveness • airway remodeling 				
d. processes occurring in the lungs during an asthma exacerbation				
2. Explain				
a. terms used to characterize asthma e.g., <ul style="list-style-type: none"> • severity • control • impairment • risk 				
b. how asthma severity and its control affect lung function measurements				
3. Teach an individual with asthma that asthma is a chronic airway disease with varying levels of severity and characterized by exacerbations				
4. Associate signs and symptoms of asthma with its underlying pathophysiology				
5. Compare asthma characteristics across age groups e.g., <ul style="list-style-type: none"> • infants • children • adults • elderly 				
B. Factors Contributing to Acute and Chronic Asthma	5	14	1	20
1. Describe to an individual with asthma				
a. differences between an allergen and an irritant				
b. common triggers that provoke asthma				
c. the way triggers (e.g., allergens, irritants, exercise, infections) can be distinct and synergistic for each individual with asthma				
d. the role of active and passive tobacco smoke exposure in the development and control of asthma				
e. the role of family history and environmental factors (e.g., infections, diet, exposures) in the development of asthma				
f. potential occupational risks in the development and control of asthma				
g. medications (e.g., β -blockers, non-steroidal anti-inflammatory agents, anesthetics) that may exacerbate asthma				
2. Explain how to identify factors (e.g., allergens, pollutants) in the environment contributing to symptoms experienced by an individual with asthma e.g., <ul style="list-style-type: none"> • home • school • work place • outside 				

**Effective through August 31, 2018**

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	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
3. Identify conditions that may mimic asthma or affect asthma control e.g., <ul style="list-style-type: none"> • obesity • obstructive sleep apnea • vocal cord dysfunction • stress • depression 				
4. Explain how specific conditions may relate to the development and control of asthma				
a. pregnancy				
b. gastroesophageal reflux disease				
c. allergic conditions e.g., <ul style="list-style-type: none"> • rhinitis • sinusitis • eczema • allergic bronchopulmonary aspergillosis 				
d. infections (e.g., sinusitis, pneumonia)				
e. COPD				
II. ASSESSMENT OF AN INDIVIDUAL WITH ASTHMA AND FAMILY	6	19	17	42
A. History from an Individual with Asthma	2	7	7	16
1. Interview an individual about				
a. the pattern of current symptoms				
b. the impact of asthma on the quality of life, activity level, and social / functional roles for an individual with asthma				
c. signs and symptoms requiring medical care				
d. high-risk asthma signs and symptoms e.g., <ul style="list-style-type: none"> • past intubations • over-use of β-agonists • poor perceivers • frequent use of systemic corticosteroids 				
e. the reason(s) for loss of control				
2. Define an individual's asthma severity and control (e.g., impairment, risk) from available information				
3. Identify				
a. triggers (e.g., irritants, allergens)				
b. exercise association				
c. co-morbid conditions e.g., x sinusitis x nasal polyps x gastroesophageal reflux disease				
4. Solicit information about medications, and alternative and complementary therapies e.g., <ul style="list-style-type: none"> • over-the-counter • prescriptions • herbal and nutritional supplements • natural food products • physical therapies (e.g., yoga, acupuncture) 				
5. Integrate information from the medical record into an assessment e.g., <ul style="list-style-type: none"> • family, clinical and medical history • physical examination • vital signs findings • laboratory, pulmonary function, and radiological results • current and past therapies • diagnostic interpretations of objective measures 				



Effective through August 31, 2018

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	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
B. Physical Signs in an Individual with Asthma	1	2	1	4
1. Recognize signs of an acute exacerbation e.g., <ul style="list-style-type: none"> • cyanosis • accessory muscle use • labored breathing • clipped speech 				
2. Recognize the significance of auscultated breath sounds e.g., <ul style="list-style-type: none"> • crackles x wheezes x silent chest 				
3. Direct an individual to emergent care based on current presentation				
C. Objective Measures	2	3	2	7
1. Emphasize the importance of using objective measures to an individual with asthma to identify asthma and assess control				
2. Explain to an individual with asthma <ul style="list-style-type: none"> a. the purpose and technique for testing allergies (e.g., IgE levels, hypersensitivity skin testing) and comorbid conditions (e.g., sinus imaging, pH probe) b. the purpose, technique, or results for <ul style="list-style-type: none"> 1) peak flow monitoring 2) spirometric measures 3) pre-bronchodilator and post-bronchodilator pulmonary function testing 4) pulse oximetry 				
3. Assess whether an individual's peak flow or spirometric results are valid				
D. Educational Needs	1	7	7	15
1. Assess <ul style="list-style-type: none"> a. the knowledge and skills of an individual with asthma and his or her family regarding asthma and treatment b. adherence barriers regarding self-assessment and self-management e.g., <ul style="list-style-type: none"> • financial • cultural • attitudes c. knowledge of potential and known triggers in an individual's home, school, or work environments d. readiness and ability to learn, and learning style in an individual with asthma e. coping strategies used by an individual with asthma and his or her family f. the primary source of healthcare for an individual with asthma g. how an individual with asthma is currently recognizing and acting on changes in his or her symptoms 				
2. Elicit goals and concerns of an individual with asthma and his or her family				
3. Utilize effective interviewing skills (e.g., ask open-ended questions, maintain eye contact)				
4. Conduct a multidimensional assessment of an individual with asthma and his or her family e.g., <ul style="list-style-type: none"> • socioeconomic • psychosocial • health literacy level • culture • language • healthcare beliefs and practices 				
III. ASTHMA MANAGEMENT	10	31	19	60
A. Medications and Delivery Devices	3	12	5	20
1. Explain how medications are prescribed based on asthma severity and control				
2. Discuss <ul style="list-style-type: none"> a. the mechanism of action (e.g., β_2 adrenergic, and leukotriene modifier) of asthma medications 				



Effective through August 31, 2018

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	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
b. the role in therapy (e.g., quick relief, long-term control) of asthma medications				
c. side effects, drug interactions, and safety (e.g., beta agonist overuse, inhaled vs. systemic corticosteroids) of asthma medications				
d. the administration route, dose, frequency, and duration of each asthma medication				
e. the relative efficacy of asthma medications				
3. Dispel misconceptions (e.g., inhaled corticosteroids vs. anabolic steroids) about asthma medications				
4. Demonstrate correct techniques for inhaled delivery devices e.g., <ul style="list-style-type: none"> • MDI • DPI • nebulizers • valved holding chambers 				
a. assembly				
b. administration				
c. cleaning				
d. replacement or refilling				
e. troubleshooting				
5. Assess whether an individual with asthma correctly demonstrates techniques for inhaled delivery devices e.g., <ul style="list-style-type: none"> • MDI • DPI • nebulizers • valved holding chambers 				
a. assembly				
b. administration				
c. cleaning				
d. replacement / refilling				
e. troubleshooting				
6. Recommend devices to optimize inhaled medication delivery for an individual with asthma e.g., <ul style="list-style-type: none"> • elderly • child • disabled 				
7. Summarize potential benefits and risks associated with alternative therapies and over-the-counter medications				
8. Emphasize importance of taking medications as prescribed when alternative and over-the-counter medications are available				
9. Discuss the purpose of <ul style="list-style-type: none"> a. immunotherapy in controlling allergy symptoms b. controlling atopic diseases (e.g., allergic rhinitis, allergic bronchopulmonary aspergillosis) c. preventive immunizations (e.g., influenza) d. treatment of comorbid conditions e. smoking cessation medications 				
B. Behavioral and Environmental Modifications	3	6	4	13
1. Recommend strategies to address <ul style="list-style-type: none"> a. the management of exercise-induced asthma b. psychosocial (e.g., stress, anxiety, depression) c. social support and family factors d. economic issues e. drug abuse f. active smoking g. adherence issues 				
a. the management of exercise-induced asthma				
b. psychosocial (e.g., stress, anxiety, depression)				
c. social support and family factors				
d. economic issues				
e. drug abuse				
f. active smoking				
g. adherence issues				

**Effective through August 31, 2018**

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	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
2. Employ culturally sensitive approaches to individuals with asthma and their families				
3. Allay concerns and fears of an individual with asthma and his or her family, and dispel myths they may believe				
4. Emphasize the importance of following a comprehensive trigger avoidance plan				
5. Recommend strategies to reduce, avoid, or eliminate common triggers in homes, work places, and schools e.g., <ul style="list-style-type: none"> • second-hand smoke • other irritants • allergens • infections • chemical exposure 				
6. Discuss the effectiveness of various equipment e.g., <ul style="list-style-type: none"> • air cleaners • vacuum cleaners • dehumidifiers • allergen-impermeable cover 				
C. Asthma Management and Education Plan	4	13	10	27
1. Development				
a. tailor the plan to the individual's				
1) goals and concerns				
2) educational needs assessment e.g., <ul style="list-style-type: none"> • learning style • health literacy • culture 				
3) asthma severity				
4) age				
b. create an individualized, written asthma action plan that addresses				
1) daily management (e.g., medications, environmental control)				
2) recognition of worsening asthma				
3) control of worsening asthma				
4) follow up asthma care				
c. create an individualized self-management education plan that <ul style="list-style-type: none"> • begins at the time of a diagnosis • is systematic • is integrated with other medical care • reinforces critical information • includes skill demonstrations for an individual with asthma • divides content into manageable amounts 				
d. review an action plan with a physician and other team members				
e. clarify a physician's instructions for an individual with asthma				
2. Implementation				
a. employ verbal and non-verbal communication skills				
b. critique educational materials for cost, readability, accuracy, specificity, illustrations, and source credibility				
c. select educational material for an individual while considering needs assessment results and the education plan				
d. encourage integration of the action plan into childcare, home, workplace, and / or school				
e. instruct an individual with asthma to assess control using symptoms and peak expiratory flow meter readings				
f. demonstrate use of peak expiratory flow equipment and results e.g., <ul style="list-style-type: none"> • use of a peak flow meter • timing of measurements • documenting results • maintaining equipment 				

**Effective through August 31, 2018**

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	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
g. coach an individual with asthma how to effectively communicate as a partner in his or her care with healthcare providers, caregivers, and asthma educator				
h. review an individual's decision-making skills and confidence for				
1) using asthma medications				
2) managing worsening asthma				
3) seeking care				
4) implementing his or her asthma action plan				
i. reinforce the importance of self-management strategies in asthma control				
j. indicate how team members should track and document progress and mastery of self-management actions				
3. Periodic reevaluation of the written asthma action plan				
a. reassess the level of asthma control				
b. review decision-making criteria with an individual with asthma and his or her family, particularly looking for what he or she can do differently				
c. reassess adherence to the written asthma action plan				
d. revise an asthma management plan after regular reassessment based on individual goals, expectations, and outcomes				
e. use				
1) symptoms diaries and checklists to assist in reevaluation of asthma control				
2) peak expiratory flow results to assist in reevaluation of asthma control				
f. establish a personal best and revise zones				
g. coordinate follow-up care at each visit to check skill in self-monitoring and self-management				
IV. ORGANIZATIONAL ISSUES	5	10	3	18
A. Needs Assessment	1	1	1	3
1. Identify outcome indicators				
2. Obtain information (e.g., methods, data sources) about the asthma population and healthcare providers				
3. Use findings to make recommendations				
B. Program Development	1	3	1	5
1. Identify resources e.g., <ul style="list-style-type: none"> • funding • facilities • personnel 				
2. Prioritize program features based on resources and characteristics of the target population (e.g., asthma severity, risk factors)				
3. Compare evidence-based solutions to program needs				
4. Create goals of program and specific objectives to meet those goals				
5. Select teaching methods and settings that will best meet objectives for the target population				
C. Program Implementation	1	1	0	2
1. Ensure safety and privacy of individuals with asthma e.g., x HIPAA x OSHA x infection control				
2. Maintain a program database				
3. Coordinate training for program staff				
D. Program Evaluation	1	2	1	4
1. Select validated program evaluation tools				
2. Assess program processes e.g., <ul style="list-style-type: none"> • adherence (e.g., attendance, diary completion) of participant • the influence of the program on participants' knowledge, skills, and / or attitudes (e.g., confidence, outcome expectations) • procedure and task implementation 				



<i>Effective through August 31, 2018</i>	Cognitive Levels			
	Recall	Application	Analysis	TOTALS
Open cells show an examination could include items from indicated cognitive levels. Shaded cells prevent appearance of items on examinations.				
3. Assess program outcomes e.g., <ul style="list-style-type: none"> • key outcomes (e.g., quality-of-life, functional status, asthma control, healthcare utilization, participant satisfaction) • measures for key program outcomes • program effectiveness 				
4. Use findings to assess program impact and need for modifications				
E. Referral and Professional Networking	1	3	0	4
1. Identify community resources that may be beneficial to the needs of an individual with asthma				
2. Organize family support / education activities				
3. Describe strategies to assist an individual with asthma with financial burdens associated with his / her disease				
4. Outline criteria for appropriate referral to an asthma specialist				
5. Collaborate with other providers				
6. Coordinate asthma care with other providers and between systems				
7. Provide education and technical assistance to <ul style="list-style-type: none"> • third-party payers • community and health care professionals • work sites • schools • faith-based groups 				
Totals	30	80	40	150

TESTING OUTSIDE OF THE UNITED STATES

Individuals who reside in U.S. Territories or outside the United States may apply to take the examination to achieve the AE-C credential. Persons who are interested in achieving the credential should access the following link so they may review the list of international testing sites.

<http://online.goAMP.com/CandidateHome/displayTCList.aspx?pExamID=20653>

Choose "International Only" from the "Country selection" menu after the webpage loads.

The list is kept current with the sites at which the AE-C Examination can be administered. A test center supervisor ensures standardized testing conditions for each administration.

NAECB SAE

The NAECB SAE is a 75-item multiple choice online practice examination. It was developed to be parallel in content and difficulty to the actual asthma educator certification exami-

nation. Items are based on the four major content areas and detailed content outline that details the knowledge, skills, and ability consistently used to provide asthma education. The content outline is available in the Candidate Handbook on the NAECB website. Each item includes rationale statements for both correct and incorrect answers. The actual examination time allotted is 3½ hours; consider completing the SAE in half that time because it contains half the number of items. The SAE should be regarded as a diagnostic tool to assess a candidate's strengths and weaknesses, rather than a study guide for the examination. A passing score on the SAE does not, in any way, guarantee a passing score on the NAECB examination. Utilization of this SAE tool is not a requirement for eligibility or for success in passing the certification examination. Certified practitioners can use the SAE to see if they are remaining current with the profession. The SAE will provide experience in computer-based testing as well as the NAECB-type items.

The SAE will be available online to you for a period of 90 days from the date the order is placed. After you receive your score report, you cannot access the examination again. Your individual results will be anonymous and are not reported back to the NAECB. You will receive a report with a total score report and subscores by major content area.



SAMPLE EXAMINATION QUESTIONS

Sample question 1. Matrixed at 1A1b application (answer: B)

Which of the following should be included when educating an adult female regarding the characteristics of asthma?

- A. Airway inflammation is the main cause of her exercise-induced asthma symptoms
- B. Bronchoconstriction is the main cause of her increased coughing during exertion
- C. Airway inflammation causes her initial symptoms when she is exposed to cigarette smoke
- D. Bronchoconstriction causes her symptoms that do not respond to quick relief medications

Sample question 2. Matrixed at IIA2 application (answer: C)

A six year old with asthma was seen by her clinician with recurrent cough and wheeze. She admits to waking twice per month with a cough the past three months and requiring albuterol twice per week. The asthma educator knows that according to the EPR-3 guidelines, this child's level of asthma control would be classified as:

- A. Very well Controlled
- B. Well controlled
- C. Not well controlled
- D. Very poorly controlled

Sample question 3. Matrixed at 1B1c application (answer: A)

An adolescent presents with wheezing, coughing, and shortness of breath after aerobic exercise. Which of the following is the MOST likely cause of these symptoms?

- A. Bronchospasm
- B. Airway inflammation
- C. Mucus production
- D. Airway edema

Sample question 4. Matrixed at IIIA2b application (answer: C)

An adolescent male with persistent asthma tells his asthma educator that his current medications are not controlling his symptoms. He is using albuterol four times daily with a valved-holding chamber. He stopped using his budesonide because he "did not feel better after using it." Which of the following actions by the asthma educator would MOST likely improve his asthma control over the short term?

- A. Verify the adequacy of his inhaler technique with a valved-holding chamber
- B. Recommend changing budesonide to a different medication
- C. Discuss the differences between the use of quick-relief and long-term control medications
- D. Advise him about environmental modifications he can employ to avoid asthma triggers.

Sample question 5. Matrixed at IC2b1 application (answer: C)

A person with asthma has a predicted peak flow reading of 400L/min. Today the peak flow reading is 450 L/min. Based on the predicted reading, what is the BEST interpretation of today's peak flow?

- A. Red zone
- B. Yellow zone
- C. Green zone
- D. Personal best zone

Sample question 6. Matrixed at IIIC1a1 application (answer: D)

Which of the following communication techniques should be used by an asthma educator to improve rapport when interviewing a woman with asthma?

- A. Address the woman by her first name
- B. Maintain continuous eye contact
- C. Speak clearly and authoritatively
- D. Encourage her to set her own asthma goals

**Sample question 7. Matrixed at IIA2 analysis (answer: C)**

A 16-year-old boy is referred to an asthma educator for review of his asthma. He is currently a quarterback for his high school football team and is hoping to receive a college scholarship to play football. He states that he never coughs, wheezes, or experiences chest tightness or shortness of breath while playing football. He does have an albuterol inhaler which he rarely uses. He states that his asthma is “not that bad.” The asthma educator reviews a pulmonary function test the boy recently completed and notices an FEV₁ of 70%. The report shows an improvement of 15% following nebulized albuterol. The asthma educator should recognize that the boy

- A. does not need medication to control asthma due to his infrequent symptoms.
- B. does not need to take his albuterol unless he has symptoms of coughing or wheezing.
- C. has uncontrolled asthma despite not displaying any symptoms.
- D. should be taught to recognize subtle symptoms that he may be ignoring now.

Sample question 8. Matrixed at IIIb6 application (answer: C)

Which of the following environmental changes would most likely improve the symptoms of a person with dust mite sensitivity?

- A. Using a HEPA filter in the living room
- B. Running a room ionizer in the bathroom
- C. Encasing the mattress and pillows in the bedroom
- D. Installing new carpet in the bedroom

Sample question 9. Matrixed at IVAD3 Analysis (answer: A)

An asthma educator is evaluating the effectiveness of a local asthma program over the last year. There is a discrepancy between patient-reported asthma severity and provider-assessed asthma severity among the program’s participants. The asthma educator wishes to evaluate what impact this discrepancy is having on asthma morbidity of the participants in the program. Which of the following would be the BEST measure of asthma morbidity to use?

- A. asthma-related emergency department visits
- B. prescribing patterns of long-term control asthma medications
- C. use of national asthma guidelines by clinicians
- D. asthma quality of life survey results

Sample question 10. Matrixed at 111A4d recall (answer D)

The nebulizer cup for a home Pari-nebulizer® should be replaced every:

- A. One month
- B. Two months
- C. Four months
- D. Six months

Sample question 11. Matrixed at IVE6 applications (answer: A)

An asthma educator is meeting with the parents of a 3-year-old girl with persistent asthma. The parents appear to understand the girl’s asthma action plan from her provider, but admit they often do not follow it. Levalbuterol and budesonide nebulizer treatment are given about four times per week and seem to control her symptoms. They do not have medical insurance and sometimes struggle with paying utility and other bills. Currently, medications are obtained through a combination of patient assistance programs and occasional samples. A referral to which provider would likely be most beneficial at this time?

- A. Social worker
- B. Pharmacist
- C. Primary care physician
- D. Asthma specialist

Sample question 12. Matrixed at IIIB5 applications (answer: A)

An asthma educator is volunteering with her local asthma coalition which is addressing asthma triggers in local schools. Which issue would be most appropriate for the group to pursue?

- A. Removal of rabbits and guinea pigs from the science classrooms
- B. Obtaining high efficiency filters for the ventilation systems
- C. Promoting non-dairy substitutions in the cafeteria
- D. Recommending non-aerobic exercises during gym classes



REVIEW REFERENCES

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Weiler, JM, Brannan JD, SD, Randolph, C et al. Practice Parameter: Exercise induced bronchoconstriction Update 2016. J Allergy Clin Immunol. 2016; 4.e1-36.

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 American Lung Association <http://www.lungusa.org>
 American Thoracic Society <http://www.thoracic.org>
 Asthma and Allergy Foundation of America <http://www.aafa.org>
 Asthma & Allergy Network/ Mothers of Asthmatics <http://www.aanma.org>
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 Guidelines for the Diagnosis and Management of Asthma <https://www.nhlbi.nih.gov/health-pro/guidelines/current/asthma-guidelines>
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 U.S. Department of Health and Human Services (Office for Civil Rights) HIPPA Privacy and Security Rules <http://hhs.gov/ocr/privacy/index.html>



ON THE DAY OF YOUR EXAMINATION

On the day of your examination appointment, report to the Test Center no later than your scheduled time. Once you enter the test center, look for the signs indicating PSI Test Center Check-In. **IF YOU ARRIVE MORE THAN 15 MINUTES AFTER THE SCHEDULED EXAMINATION TIME, YOU WILL NOT BE ADMITTED.**

To gain admission to the test center, you must present two forms of identification. The primary form must be government issued, current and include your name, signature and photograph. No form of temporary identification will be accepted. You will also be required to sign a roster for verification of identity.

- Examples of valid primary forms of identification are: driver's license with photograph; state identification card with photograph; passport; military identification card with photograph.
- The secondary form of identification must display your name and signature for signature verification (e.g., credit card with signature, social security card with signature, employment/student ID card with signature).
- If your name on your registration is different than it appears on your identification, you must bring proof of your name change (e.g., marriage license, divorce decree or court order).

You are prohibited from misrepresenting your identity or falsifying information to obtain admission to the Test Center. **YOU MUST HAVE PROPER IDENTIFICATION TO GAIN ADMISSION TO THE TEST CENTER.**

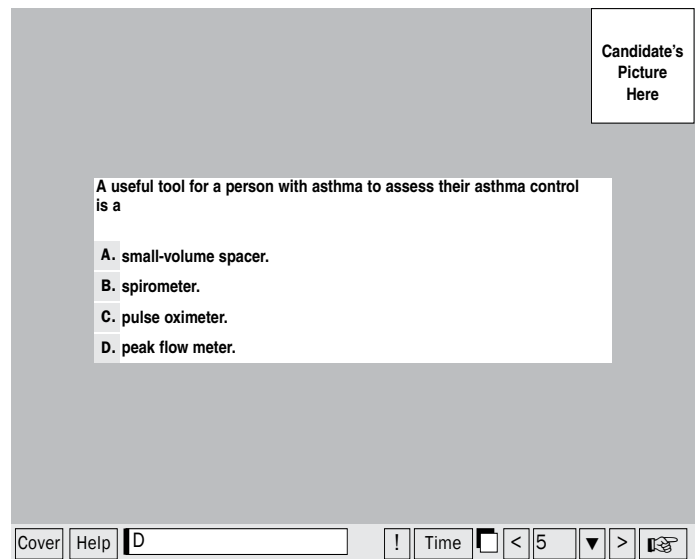
After your identification has been confirmed, you will be directed to a testing carrel. You will be prompted on-screen to enter your Social Security number. Your photograph, taken before beginning the examination, will remain on-screen throughout your examination session. This photograph will also print on your score report.

PRACTICE EXAMINATION

Prior to attempting the timed examination, you will be given the opportunity to practice taking an examination on computer. The time you use for this practice examination is NOT counted as part of your examination time. When you are comfortable with the computer testing process, you may quit the practice session and begin the timed examination.

TIMED EXAMINATION

Following the practice examination, you will begin the timed examination. Before beginning, instructions for taking the examination are provided on-screen. The examination contains 175 questions. Three and one-half hours are allotted to complete the examination. The following is a sample of what the computer screen will look like when you are attempting the examination.



The computer monitors the time you spend on the examination. The examination will terminate if you exceed the time limit. You may click on the “Time” button in the lower right portion of the screen to monitor your time. A digital clock indicates the time remaining for you to complete the examination. The time feature may also be turned off during the examination.

Only one examination question is presented at a time. The question number appears in the lower right portion of the screen. The entire examination question appears on-screen (i.e., stem and four options labeled – A, B, C and D). **Indicate your choice by either entering the letter of the option you think is correct (A, B, C or D) or clicking on the option using the mouse.** To change your answer, enter a different option by typing the letter in the response box or by clicking on the option using the mouse. You may change your answer as many times as you wish during the examination time limit.

To move to the next question, click on the forward arrow (>) in the lower right portion of the screen. This action will move you forward through the examination question by question. If you wish to review any question or questions, click the backward arrow (<) or use the left arrow key to move backward through the examination.



A question may be left unanswered for return later in the examination session. Questions may also be bookmarked for later review by clicking in the blank square to the right of the Time button. Click on the hand icon to advance to the next unanswered or bookmarked question on the examination. To identify all unanswered and bookmarked questions, repeatedly click on the hand icon. When the examination is completed, the number of questions answered is reported. If not all questions have been answered and there is time remaining, return to the examination and answer those questions. Be sure to answer each question before ending the examination. **There is no penalty for guessing.**

You may make comments for any question by clicking on the button displaying an exclamation point (!) to the left of the Time button. This opens a dialogue box where comments may be entered. Comments will be reviewed, but individual responses will not be provided.

INCLEMENT WEATHER, POWER FAILURE OR EMERGENCY

In the event of inclement weather or unforeseen emergencies on the day of an examination, PSI will determine whether circumstances warrant the cancellation, and subsequent rescheduling, of an examination. The examination will usually not be rescheduled if the Test Center personnel are able to open the Test Center.

You may visit www.goAMP.com prior to the examination to determine if PSI has been advised that any Test Centers are closed. Every attempt is made to administer the examination as scheduled; however, should an examination be canceled at a Test Center, all scheduled candidates will receive notification following the examination regarding rescheduling or reapplication procedures.

If power to a Test Center is temporarily interrupted during an administration, your examination will be restarted. The responses provided up to the point of interruption will be intact, but for security reasons the questions will be scrambled.

SECURITY

The NAECB and PSI maintain examination administration and security standards are designed to ensure all candidates are provided the same opportunity to demonstrate their abilities. The Test Center is continuously monitored by audio and video surveillance equipment for security purposes.

The following security procedures apply during the examination:

- Examinations are proprietary. No cameras, notes, tape recorders, pagers or cellular/smart phones are allowed in the testing room. Possession of a cellular/smart phone or other electronic devices is strictly prohibited and will result in dismissal from the examination.
- Only silent, non-programmable calculators without alpha keys or printing capabilities are allowed in the testing room.
- No guests, visitors or family members are allowed in the testing room or reception areas.
- Candidates may be subjected to a metal detection scan upon entering the examination room.

PERSONAL BELONGINGS

No personal items, valuables, or weapons should be brought to the Test Center. Only wallets and keys are permitted. Coats must be left outside the testing room. You will be provided a soft locker to store your wallet and/or keys with you in the testing room. The proctor will lock the soft locker prior to you entering the testing room. You will not have access to these items until after the examination is completed. Please note the following items will not be allowed in the testing room except securely locked in the soft locker.

- watches
- hats
- wallets
- keys

Once you have placed your personal belongings into the soft locker, you will be asked to pull your pockets out to ensure they are empty. If all personal items will not fit in the soft locker you will not be able to test. The site will not store or be responsible for your personal belongings.

If any personal items are observed or heard (e.g., cellular/smart phones, alarms) in the testing room after the examination is started, the administration will be forfeited.

EXAMINATION RESTRICTIONS

- Pencils will be provided during check-in.
- You will be provided with one piece of scratch paper at a time to use during the examination, unless noted on the sign-in roster for a particular candidate. You must return the scratch paper to the supervisor at the completion of testing, or you will not receive your score report.
- No documents or notes of any kind may be removed from the Test Center.



- No questions concerning the content of the examination may be asked during the examination.
- Eating, drinking or smoking is not permitted in the Test Center.
- You may take a break whenever you wish, but you will not be allowed additional time to make up for time lost during breaks.

MISCONDUCT

If you engage in any of the following conduct during the examination you may be dismissed, your scores will not be reported and examination fees will not be refunded. Examples of misconduct are when you:

- create a disturbance, are abusive, or otherwise uncooperative;
- display and/or use electronic communications equipment such as pagers, cellular/smart phones;
- talk or participate in conversation with other examination candidates;
- give or receive help or are suspected of doing so;
- leave the Test Center during the administration;
- attempt to record examination questions or make notes;
- attempt to take the examination for someone else;
- are observed with personal belongings, or
- are observed with notes, books or other aids without it being noted on the roster.

COPYRIGHTED EXAMINATION QUESTIONS

All examination questions are the copyrighted property of NAECB. It is forbidden under federal copyright law to copy, reproduce, record, distribute or display these examination questions by any means, in whole or in part. Doing so may subject you to severe civil and criminal penalties.

FAILING TO REPORT FOR AN EXAMINATION

If you fail to report for an examination, you forfeit the application and all fees paid to take the examination. A completed application and examination fee are required to reapply for examination.

FOLLOWING THE EXAMINATION

After completing the examination, you are asked to answer a short evaluation of your examination experience. You are then instructed to report to the examination proctor to

receive your score report. Scores are reported in printed form only, in person or by U.S. mail. Scores are not reported over the telephone, by electronic mail or by facsimile.

Your score report will indicate a “pass” or “fail.” Additional detail is provided in the form of raw scores by major content category. A raw score is the number of questions you answered correctly. Your pass/fail status is determined by your raw score. Even though the examination consists of 175 questions, your score is based on 150 questions; 25 questions are “pretest” questions.

The methodology used to set the minimum passing score is the Angoff method, in which expert judges estimate the passing probability of each examination question. These ratings are averaged to determine the minimum passing score (i.e., the number of correctly answered questions required to pass the examination).

IF YOU PASS THE EXAMINATION

If you pass the NAECB Examination, you are allowed to use the designation AE-C®. Passing candidates will receive a certificate signed by the Chairman of the NAECB by the end of the month following the examination month.

IF YOU DO NOT PASS THE EXAMINATION

If you do not pass the examination, you may reschedule a reexamination appointment within one year of your application date by contacting PSI at www.goAMP.com or 888-519-9901. Repeat candidate fees apply (\$250) for each time the examination is repeated. There is a waiting period of ninety (90) days between examination attempts with a maximum of three (3) attempts in a one (1) year period. In the case of extenuating circumstances, candidates may petition the NAECB. If the time has exceeded one year since the date of your application to NAECB, you will need to apply to the NAECB again for permission to take the NAECB examination with all the associated fees (\$350). An additional \$145 fee is required to schedule an examination appointment outside of the U.S. or at a U.S. Territory.

SCORES CANCELED BY THE NAECB OR PSI

The NAECB is responsible for the integrity of the scores they report. On occasion, occurrences, such as computer malfunction or misconduct by a candidate, may cause a score to be suspect. The NAECB is committed to rectifying such discrepancies as expeditiously as possible. The NAECB may void examination results if, upon investigation, violation of its regulations is discovered.



CONFIDENTIALITY

Information about candidates for testing or renewal of certification and their examination results are considered confidential; however, the NAECB reserves the right to use information supplied by or on behalf of a candidate in the conduct of research. Studies and reports concerning candidates will contain no information identifiable with any candidate, unless authorized by the candidate.

DUPLICATE SCORE REPORT

You may purchase additional copies of your score report at a cost of \$25 per copy. Requests must be submitted to PSI, in writing, within 12 months after the examination. The request must include your name, Social Security number, mailing address, telephone number, date of examination and examination taken. Submit this information with the required fee payable to PSI Services Inc. Duplicate score reports will be mailed within approximately five business days after receipt of the request and fee.

RENEWAL OF CERTIFICATION

Attaining certification is an indication of mastery of a well-defined body of knowledge at a point in time. Periodic renewal of the certification is required to maintain certified status. Initial certification is valid for seven years. Certificants may renew their certification only up to one year prior to the expiration of the initial certification. The recertification fee is \$300.


Recertification can be obtained in two ways:

1) By re-examination which provides 7 additional years of certification upon passing; 2) Through Continuing Education Units (CEUs) which provides 5 additional years of certification upon meeting all the requirements. Information about recertification by CEUs is found on the website at www.naecb.com in the certificant corner section.

Failure To Renew: A certificant who fails to renew his/her certification is no longer considered certified and may not use the credential awarded for certification in professional communications, such as on letterhead, stationery and business cards, in directory listings and in signature.




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
1. THE ASTHMA CONDITION	9	18	3	30
A. Pathophysiology	4	6	0	10
1. Teach an individual with asthma and their family using simple language by illustrating the following with appropriate educational aids <ol style="list-style-type: none"> normal pulmonary anatomy and physiology alterations in lung anatomy and physiology that characterize asthma (inflammation, bronchial hyperresponsiveness, bronchial wall edema, excess mucus secretion, smooth muscle contractions) the processes occurring in the lungs during an asthma exacerbation potential long-term sequelae of airway inflammation (e.g., hyperresponsiveness, airway remodeling) 2. Explain terms used to characterize asthma (e.g., severity, control, impairment, risk) 3. Explain how asthma severity and its control affect lung function measurements 4. Teach an individual with asthma that asthma is a chronic airway disease with varying levels of severity and characterized by exacerbations 5. Associate signs and symptoms of asthma with its underlying pathophysiology 6. Compare asthma characteristics across age groups (e.g., infants, children, adults, elderly)				
B. Factors Contributing to Acute and Chronic Asthma	5	12	3	20
1. Describe to an individual with asthma: <ol style="list-style-type: none"> differences between an allergen and an irritant common triggers that provoke asthma how triggers (e.g., allergens, irritants, exercise, infections) can be distinct and synergistic for each individual with asthma the role of tobacco smoke exposure (in all forms) in the development and control of asthma the role of family history (including genetics) and environmental factors (e.g., infections, diet, exposures) in the development of asthma potential occupational risks in the development and control of asthma medications (e.g., β-blockers, non-steroidal antiinflammatory agents, anesthetics) that may exacerbate asthma 				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
2. Explain how to identify factors (e.g., allergens, pollutants) in the environment contributing to symptoms experienced by an individual with asthma: e.g., <ul style="list-style-type: none"> • home • school • work place • outdoors 3. Identify conditions that may mimic asthma or affect asthma control: e.g., <ul style="list-style-type: none"> • obesity • obstructive sleep apnea • vocal cord dysfunction • stress • depression 4. Explain how specific conditions may relate to the development and control of asthma: <ol style="list-style-type: none"> a. pregnancy b. gastroesophageal reflux disease c. allergic conditions (e.g., rhinitis, sinusitis, eczema) d. infections (e.g., sinusitis, pneumonia) e. COPD 				
2. ASSESSMENT OF AN INDIVIDUAL WITH ASTHMA AND FAMILY	7	20	7	34
A. History from an Individual with Asthma	2	6	2	10
1. Interview an individual about the pattern of current symptoms 2. Interview an individual about the impact of asthma on the quality of life, activity level, and social / functional roles for an individual with asthma 3. Interview an individual about signs and symptoms requiring medical care 4. Interview an individual about high-risk asthma signs and symptoms (e.g., past intubations, over-use of β -agonists, "poor perceivers", frequent use of systemic corticosteroids) 5. Interview an individual about reason(s) for loss of control 6. Define an individual's asthma severity and control (e.g., impairment, risk) from available information 7. Identify the criteria for appropriate referral of an individual to an asthma specialist 8. Identify triggers (e.g., irritants, allergens) 9. Identify association of exercise with asthma symptoms				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
10. Identify co-morbid conditions (e.g., sinusitis, nasal polyps, gastroesophageal reflux disease, obesity, obstructive sleep apnea) 11. Solicit information about medications and alternative and complementary therapies: e.g., <ul style="list-style-type: none"> • over-the-counter • prescription medications • herbal and nutritional supplements • natural food products • physical therapies (e.g., yoga, acupuncture) 12. Integrate information from the medical record into an assessment: e.g., <ul style="list-style-type: none"> • family, clinical, and past medical history • physical examination • vital signs findings • laboratory, pulmonary function, and radiological results • current and past therapies • diagnostic interpretations of objective measures 				
B. Physical Signs in an Individual with Asthma	1	2	1	4
1. Recognize signs of an acute exacerbation (e.g., cyanosis, accessory muscle use, labored breathing, clipped speech) 2. Recognize the significance of auscultated breath sounds (e.g., crackles, wheezes, and silent chest) 3. Direct an individual to emergent care based on current presentation				
C. Objective Measures	2	6	2	10
1. Emphasize to an individual the importance of using objective measures to identify asthma and assess control (e.g., Asthma Control Test®, symptom monitoring) 2. Explain to an individual with asthma the importance of testing for allergies and comorbidities 3. Explain to an individual with asthma the purpose, technique, or results for <ol style="list-style-type: none"> a. spirometric measures b. pre-bronchodilator and post-bronchodilator pulmonary function testing c. pulse oximetry d. exhaled nitric oxide e. in vitro specific IgE or skin prick tests 				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
4. Explain to an individual with asthma the purpose of bronchoprovocation (e.g., methacholine challenge, cold-air challenge, exercise challenge) 5. Assess whether an individual's peak flow or spirometric results are valid				
D. Educational Needs	2	6	2	10
1. Assess the knowledge and skills of an individual with asthma and his or her family regarding asthma and treatment 2. Assess adherence barriers (e.g., financial, cultural, attitudes) regarding self-assessment and self-management 3. Assess knowledge of potential and known triggers in an individual's home, school, or work environments 4. Assess readiness and ability to learn, and learning style in an individual with asthma 5. Assess coping strategies used by an individual with asthma and his or her family 6. Assess the primary source of healthcare for an individual with asthma 7. Assess how an individual with asthma is currently recognizing and acting on changes in his or her symptoms 8. Elicit goals and concerns of an individual with asthma and his or her family 9. Employ effective interviewing skills (e.g., ask open-ended questions, maintain eye contact) 10. Conduct a multidimensional assessment of an individual with asthma and his or her family: e.g., <ul style="list-style-type: none"> • socioeconomic • psychosocial • health literacy level • culture • language • healthcare beliefs and practices 				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
3. ASTHMA MANAGEMENT	13	32	26	71
A. Medications and Delivery Devices	5	16	4	25
<ol style="list-style-type: none"> 1. Explain how medications are prescribed based on asthma severity and control 2. Discuss asthma medications: <ol style="list-style-type: none"> a. mechanism of action (e.g., β agonist, leukotriene modifier, muscarinic antagonist, immunomodulating biologicals) b. role in therapy (e.g., quick relief, long-term control) c. side effects, drug interactions, and safety (e.g., β agonist overuse, inhaled vs. systemic corticosteroids) d. administration route, dose, frequency, and duration e. relative efficacy 3. Dispel misconceptions (e.g., inhaled corticosteroids vs. anabolic steroids) about asthma medications 4. Demonstrate correct techniques for inhaled delivery devices: e.g., <ul style="list-style-type: none"> • MDI • DPI • soft-mist inhaler • nebulizers • valved holding chambers <ol style="list-style-type: none"> a. assembly b. administration c. cleaning d. replacement or refilling e. troubleshooting 5. Assess whether an individual with asthma correctly demonstrates techniques for inhaled delivery devices: e.g., <ul style="list-style-type: none"> • MDI • DPI • soft-mist inhaler • nebulizers • valved holding chambers <ol style="list-style-type: none"> a. assembly b. administration c. cleaning d. replacing or refilling e. troubleshooting 				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
<ol style="list-style-type: none"> 6. Recommend devices to optimize inhaled medication delivery for an individual with asthma (e.g., elderly, child, disabled) 7. Summarize potential benefits and risks associated with alternative therapies and over-the-counter medications 8. Emphasize importance of taking medications as prescribed when alternative and over-the-counter medications are available 9. Discuss the purpose of <ol style="list-style-type: none"> a. controlling atopic diseases (e.g., immunotherapy, immunomodulating biologicals, intranasal therapies) b. preventive immunizations (e.g., influenza vaccination, pneumococcal vaccination) c. treatment of comorbid conditions d. smoking cessation medications 				
B. Behavioral and Environmental Modifications	3	4	7	14
<ol style="list-style-type: none"> 1. Recommend strategies to address <ol style="list-style-type: none"> a. the management of exercise-induced asthma b. psychosocial factors (e.g., stress, anxiety, depression) c. social support and family factors d. economic issues e. drug abuse f. active smoking g. adherence issues 2. Employ culturally sensitive approaches to individuals with asthma and their families 3. Allay concerns and fears of an individual with asthma and his or her family, and dispel myths they may believe 4. Emphasize the importance of following a comprehensive trigger avoidance plan 5. Recommend strategies to reduce, avoid, or eliminate common triggers in homes, work places, and schools: e.g., <ul style="list-style-type: none"> • second-hand smoke • other irritants • allergens • infections • chemical exposure 6. Discuss the effectiveness of various equipment (e.g., air cleaners, vacuum cleaners, dehumidifiers, allergen-impermeable cover) 7. Recommend home visits to mitigate barriers to optimal asthma management 				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
C. Asthma Self-Management Education Plan	3	4	12	19
<ol style="list-style-type: none"> 1. Create an individualized self-management education plan 2. Tailor the plan to the individual's goals and concerns 3. Tailor the plan to the individual's educational needs assessment (e.g., learning style, health literacy, culture) 4. Tailor the plan to the individual's asthma severity 5. Tailor the plan to the individual's age 6. Select educational material for an individual while considering needs assessment results and the education plan 7. Coach an individual with asthma how to effectively communicate as a partner in his or her care with healthcare providers, caregivers, and asthma educator 8. Review an individual's decision-making skills and confidence for <ol style="list-style-type: none"> a. using asthma medications b. managing worsening asthma c. seeking care 9. Reinforce the importance of self-management strategies in asthma control 10. Reinforce the importance of routine follow-up care 11. Indicate how team members should track and document progress and mastery of self-management actions 				
D. Written Asthma Action Plan	2	6	2	10
<ol style="list-style-type: none"> 1. Create an individualized, written asthma action plan that addresses <ol style="list-style-type: none"> a. daily management (e.g., medications, environmental control, self-monitoring) b. recognition of worsening asthma c. control of worsening asthma and appropriate follow-up care 2. Review written asthma action plan with clinician and other team members 3. Clarify a clinician's instructions for an individual with asthma 4. Encourage integration of the written asthma action plan into childcare, home, workplace, and / or school 5. Instruct an individual with asthma to assess control using symptoms and peak expiratory flows 6. Review an individual's decision-making skills and confidence for implementing his or her written asthma action plan 7. Demonstrate use of peak expiratory flow equipment with return demonstration 				




APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
E. Periodic Reevaluation of the Written Asthma Action Plan	0	2	1	3
1. Reassess the level of asthma control 2. Review decision-making criteria with an individual with asthma and his or her family, particularly looking for what he or she can do differently 3. Reassess adherence to the written asthma action plan 4. Revise an asthma management plan after regular reassessment based on individual goals, expectations, and outcomes 5. Use monitoring tools to assist in reevaluation of asthma control: symptoms diaries and checklists 6. Use monitoring tools to assist in reevaluation of asthma control: peak expiratory flow results 7. Establish a personal best and revise zones 8. Coordinate follow-up care at each visit to check skill in self-monitoring and self-management				
4. ORGANIZATIONAL ISSUES	5	8	2	15
A. Needs Assessment	1	2	0	3
1. Identify outcome indicators 2. Obtain information (e.g., methods, data sources) about the asthma population and healthcare providers 3. Use findings to make recommendations				
B. Program Development	1	2	1	4
1. Identify program resources (e.g., funding, facilities, personnel) 2. Prioritize program features based on resources and characteristics of the target population (e.g., asthma severity, risk factors) 3. Compare evidence-based solutions to program needs 4. Create goals of program and specific objectives to meet those goals 5. Select teaching methods and settings that will best meet objectives for the target population 6. Critique educational materials for cost, readability, accuracy, specificity, illustrations, and source credibility				
C. Program Implementation	1	1	0	2
1. Ensure safety and privacy of individuals with asthma (e.g., HIPAA, FERPA, OSHA, infection control) 2. Maintain a program database 3. Coordinate training for program staff				



APPENDIX A: DETAILED CONTENT OUTLINE EFFECTIVE SEPTEMBER 1, 2018

 National Asthma Educator Certification Board (NAECB) Examination Specifications	Cognitive Level			Total
	Recall	Application	Analysis	
D. Program Evaluation	1	1	1	3
1. Select validated program evaluation tools 2. Assess program processes: e.g., <ul style="list-style-type: none"> • adherence (e.g., attendance, diary completion) of participant • the influence of the program on participants' knowledge, skills, or attitudes (e.g., confidence, outcome expectations) • procedure and task implementation 3. Assess program outcomes: e.g., <ul style="list-style-type: none"> • key outcomes (e.g., quality-of-life, functional status, asthma control, healthcare utilization, participant satisfaction) • measures for key program outcomes • program effectiveness 4. Use findings to assess program impact and need for modifications				
E. Professional Partnerships	1	2	0	3
1. Identify community resources that may be beneficial to the needs of individuals with asthma 2. Organize family support / education activities 3. Collaborate with other providers and between systems 4. Provide education and technical assistance to <ul style="list-style-type: none"> • third-party payers • community and health care professionals • work sites • schools • faith-based groups 				
Total	34	78	38	150

NAECB EXAMINATION APPLICATION

Applicants may complete the application process online at www.naecb.org by selecting Examination Application. If you prefer to submit the paper application, please complete all sections of this two-page form. Include credit card information or enclose a cashier's check or money order payable to PSI Services Inc. for the appropriate amount. Mail the application and fee to:

**NAECB Examination, PSI, 18000 W. 105th St., Olathe, KS 66061-7543.
For further information, call Candidate Services at 888-519-9901.**

PERSONAL INFORMATION *(please print using black or blue ink)*

Name: _____
(Last, First, Middle)

Social Security Number: _____ Date of Birth: _____
If you do not wish to provide your SSN, leave this area blank and PSI will assign an ID number to you.

Daytime Telephone Number: _____ Evening Telephone Number: _____

Fax Number: _____ Email Address: _____

Street Address: _____

City: _____ State: _____ Zip Code/Postal Code: _____ Country: _____

Eligibility Requirements – Please complete one of the following eligibility requirements:

- I am a currently licensed or credentialed health care professional in the following profession (please indicate by checking box):
 - Physician (MD, DO)
 - Physician Assistant (PA-C)
 - Nurse (RN, LPN, NP)
 - Respiratory Therapist (RRT, CRT)
 - Pulmonary Function Technologist (CPFT, RPFT)
 - Pharmacist (RPh)
 - Social Worker (CSW)
 - Health Educator (CHES)
 - Physical Therapist (PT)
 - Occupational Therapist (OT)

OR

- I am applying for the NAECB Examination with a minimum of 1,000 hours experience providing direct patient asthma education, counseling or coordinating services.

EXAMINATION INFORMATION

I am including a Special Accommodations Request:

- No
- Yes *(Complete the form included in this handbook.)*

I am a: New Applicant
 Reapplicant
 Recertifier

EXAMINATION FEE

Payment may be made by credit card, cashier's check or money order payable to PSI Services Inc.

Application Status	Location of Candidate	
	United States	U.S. Territories and Outside the U.S.
First attempt	\$350	\$495
Repeat attempt	\$250	\$395
Recertification	\$300	\$445

Total Fee: _____

If payment is made by credit card, complete the following;

- VISA MasterCard
- American Express Discover

TEST CENTER LOCATION

- United States Test Center
- U.S. Territory or outside the U.S. Test Center

Credit Card Number _____

Expiration Date _____

Name on Card _____

Signature _____

DEMOGRAPHIC QUESTIONS

1. Nature of the Practice setting in which you work:

- University
- Hospital
- Multispecialty Clinic
- Physician Office

- Academic
- Private Practice
- Nursing Home/Extended Care Facility
- Home Health Agency
- Emergency Department
- Other _____

2. Number of Hours (per week) in Asthma Education, Coordination or Counseling Services:

- Less than 8 hours
- 8-16 hours
- 17-24 hours
- 25-32 hours
- 33-40 hours
- More than 40 hours

5. Location of Primary Practice Setting:

- Urban
- Rural
- Suburban

3. Experience as an Asthma Educator, Coordinator or Counselor:

- 0-1 year
- 2-3 years
- 4-5 years
- 6-10 years
- 11-15 years
- 16 years or more

6. Highest Education Level Achieved:

- Diploma (college)
- Associate Degree
- Baccalaureate Degree
- Master's Degree
- Doctoral or Medical Degree

4. Type of Primary Practice Setting:

(check all that apply to your ONE primary practice setting)

- Hospital Inpatient
- Hospital Outpatient
- Both Hospital Inpatient/Outpatient
- Physician's Office
- Community Health Agency

7. How did you hear about Certification?
(check all that apply)

- Professional Journal *(specify)* _____
- Regional Meeting *(specify)* _____
- National Meeting *(specify)* _____
- NAECB Mailing
- NAECB website
- Colleague
- Other _____

CODE OF CONDUCT AND SIGNATURE

AE-C® Applicants/Certificants shall abide by the rules and regulations promulgated by the NAECB with regard to applying for and taking the examination. Once notified of successful completion of the examination, applicants shall promptly adopt the designation AE-C® and utilize it as part of their professional activities.

AE-C® Certificants shall immediately cease and desist using the designation in any and all forms in the event they (1) decide not to seek re-certification, or (2) are no longer eligible for any reason including termination by the NAECB. No one shall adopt the designation that has not been so notified by the NAECB.

Applicants and Certificants will hold confidential information regarding the examination that could assist another applicant seeking certification.

Certificants will conduct themselves in a professional manner and provide asthma coordination, counseling and education in a manner that will be in furtherance of the mission of the NAECB and in no way be harmful to the public. Certificants will not engage in any inappropriate or unethical behavior, nor provide asthma coordination, counseling or education while experiencing any physical impairment affecting their performance.

Applicants, through the act of applying for and paying their examination fee, agree to abide by this Code of Conduct, the NAECB Disciplinary Policies, and all rules and regulations of the NAECB.

I certify that I agree to abide by regulations of the NAECB Program and the Code of Conduct described above. I believe that I comply with all admission policies for the NAECB Examination. I certify that the information I have submitted in this application is complete and correct to the best of my knowledge and belief. I understand that, if the information I have submitted is found to be incomplete or inaccurate, my application may be rejected or my examination results may be delayed or voided.

(Sign and date in ink.)

Name (Please Print): _____

Signature: _____ Date: _____



REQUEST FOR SPECIAL EXAMINATION ACCOMMODATIONS

If you have a disability covered by the Americans with Disabilities Act, please complete this form and provide the Documentation of Disability-Related Needs on the next page so your examination accommodations can be processed efficiently. The information you provide and any documentation regarding your disability and your need for examination accommodations will be treated with strict confidentiality.

Candidate Information

Social Security # _____ - _____ - _____

Name (Last, First, Middle Initial, Former Name)

Mailing Address

City State Zip Code

Daytime Telephone Number

Special Accommodations

I request special accommodations for the _____ examination.

Please provide (check all that apply):

- Reader
- Extended examination time (time and a half)
- Reduced distraction environment
- Other special accommodations (Please specify.)

Comments: _____

PLEASE READ AND SIGN:

I give my permission for my diagnosing professional to discuss with PSI staff my records and history as they relate to the requested accommodation.

Signed: _____ **Date:** _____

**Return this form with your examination application and fee to:
PSI, 18000 W. 105th St., Olathe, KS 66061-7543, Fax: 913-895-4651.
If you have questions, call Candidate Services at 888-519-9901.**



DOCUMENTATION OF DISABILITY-RELATED NEEDS

Please have this section completed by an appropriate professional (education professional, physician, psychologist, psychiatrist) to ensure that PSI is able to provide the required examination accommodations.

Professional Documentation

I have known _____ since ____ / ____ / ____ in my capacity
Candidate Name Date

Professional Title

The candidate discussed with me the nature of the examination to be administered. It is my opinion that, because of this candidate's disability described below, he/she should be accommodated by providing the special arrangements listed on the Request for Special Examination Accommodations form.

Description of Disability: _____

Signed: _____ **Title:** _____

Printed Name: _____

Address: _____

Telephone Number: _____

Date: _____ **License # (if applicable):** _____

**Return this form with your examination application and fee to:
 PSI, 18000 W. 105th St., Olathe, KS 66061-7543, Fax: 913-895-4651.
 If you have questions, call Candidate Services at 888-519-9901.**