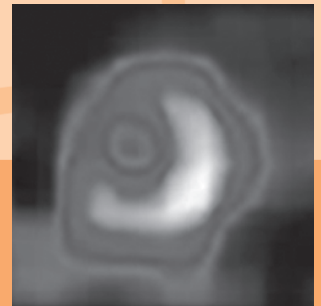
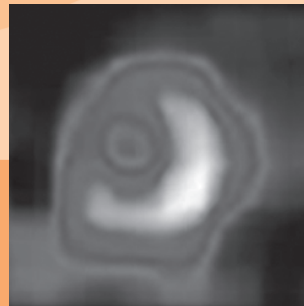
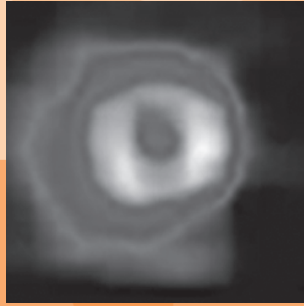


The Certification Board of  
Nuclear Cardiology announces



2009 CANDIDATE BULLETIN

# Certification Examination in Nuclear Cardiology

NOVEMBER 30 - DECEMBER 5, 2009

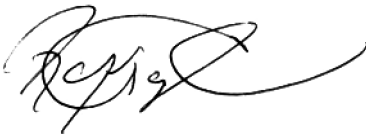
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## Message from the CBNC President

On behalf of the CBNC Board of Directors, I commend your decision to certify in nuclear cardiology. In the years since its founding, CBNC has certified 6,790 individuals from more than 50 countries. Moreover, CBNC has received recognition within the U.S. and internationally from professional societies, credentialing organizations and insurance carriers. In 2001 CBNC became the first certification organization to receive recognition from the U.S. Nuclear Regulatory Commission under 10 CFR Part 35. Our certification program was re-recognized in 2005, together with those of a number of other important certifying bodies.

As you begin the application process, I would like to explain a critical but not well understood aspect of CBNC's Certification Program. The program consists of two components: 1) Determination of Eligibility, and 2) the Examination. Both elements are equally essential and both are approached with a level of seriousness some applicants have found unexpected. In determining the eligibility of an applicant, staff is required to obtain the appropriate documents and to ask for clarification or obtain additional material if warranted. The same dedication to excellence of the exam itself is devoted to assuring the eligibility of each candidate. Together, the two components of the program construct a credential of recognized value and importance.

We acknowledge that obtaining certification in nuclear cardiology involves time and money. We are glad you agree that the resulting value to you and to our field is worth the effort.



Robert J. Gropler, MD  
CBNC President

### Contact Information

#### Certification Board of Nuclear Cardiology

101 Lakeforest Boulevard, Ste. 401, Gaithersburg, MD 20877 USA

Tel: +240.631.8151 ♦ Fax: +240.631.8152

[administration@cbnc.org](mailto:administration@cbnc.org) ♦ [www.cbnc.org](http://www.cbnc.org)

#### Prometric Exam Scheduling

Tel: 800.371.1989 \*

[www.prometric.com](http://www.prometric.com)

\* For contact information outside the United States, U.S. Territories or Canada, visit the Prometric Website



### 2009 Important Dates

#### Examination Testing Window

Monday, November 30 - Saturday, December 5, 2009

#### Certification Application Postmark Deadlines

*Regular* - Friday, July 10, 2009 (\$895)

*Mid* - Friday, September 18, 2009 (\$995)

*Late* - Friday, October 9, 2009 (\$1,095)

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### Disclaimer

The information contained in the 2009 Candidate Bulletin is valid for 2009 only. The Board of Directors reserves the right to make changes in its Policies and Procedures, including eligibility requirements and fees, from year to year. The Board cannot assume responsibility for giving advance notice thereof.

### Notice

When signing the application forms found in this bulletin, or on the CBNC online application website you are agreeing to all policies outlined in this booklet and on our website. You have the right and responsibility to request a complete set of CBNC policies prior to applying for the exam.

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# INTRODUCTION

## Certification Board of Nuclear Cardiology

The Certification Board of Nuclear Cardiology (CBNC) is a not-for-profit corporation established in 1996 to develop and administer practice-related examinations in the field of Nuclear Cardiology and to award certification to those physicians who successfully complete the CBNC examination process. The mission of the CBNC is to support optimal patient care and enhancement of the field through a certification program that promotes quality, professionalism and practice-based learning and improvement.

The CBNC is a fully autonomous entity, independent of any other association, society, or academy. This independence allows the CBNC to maintain integrity concerning policy matters related to certification. Since 2003, CBNC has collaborated with the European Council of Nuclear Cardiology (ECNC) on development of the exams. ECNC has representation on the CBNC's Examination Committee.

The CBNC will issue a certificate to successful candidates who then may present themselves to the public as specialists in the field of Nuclear Cardiology. Successful candidates may designate on letterhead, cards, etc. that they are "Diplomates of the Certification Board of Nuclear Cardiology". A listing of certified physicians is available to medical groups and to the public on the CBNC website ([www.cbnc.org](http://www.cbnc.org)). To date there have been 6,790 physicians certified by the CBNC.

## The Purpose of Certification

The Certification Board of Nuclear Cardiology (CBNC) is committed to the certification of Nuclear Cardiology practitioners. Certification provides practice-based requirements against which members of the profession can be assessed. The purposes of the CBNC Certification Program are as follows:

- ◆ to establish the domain of the practice of Nuclear Cardiology for certification;
- ◆ to assess the level of knowledge demonstrated by Nuclear Cardiology specialists in a valid manner;
- ◆ to encourage professional growth in, and enhance the quality of, the practice of Nuclear Cardiology;
- ◆ to recognize formally individuals who meet the requirements set by CBNC; and
- ◆ to serve the public by encouraging quality patient care in the practice of Nuclear Cardiology.

## Scope of Certification

The eligibility requirements and examination materials for the CBNC Examination in Nuclear Cardiology have been developed based on substantial review and analysis of the current state of medical and scientific knowledge of Nuclear Cardiology as reflected in the medical literature. The CBNC Examination Committee, with the assistance and advice of professionals in relevant fields, has attempted to develop a certification that recognizes accepted levels of expertise in the profession with the goal of improving patient care. However, no certification program can guarantee competence or successful treatment to the public. In addition, given the rapid changes in medical knowledge and the speed of scientific developments, the CBNC cannot warrant that the examination materials will at all times reflect the most current state of the art. The CBNC welcomes constructive comments and suggestions from the profession. The CBNC Certification Program has been designed to comply with testing industry standards.

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## ABOUT THE EXAMINATIONS

### Exam Development

A national analysis of the practice of Nuclear Cardiology was conducted in 1995 in order to define the responsibilities, tasks and knowledge necessary for physicians to practice in the field of Nuclear Cardiology. Other Practice Analyses were conducted in 2001 and 2006 to ensure that the content of the CBNC examination continues to reflect accurately current practice in Nuclear Cardiology. The data for the studies were collected from a cross section of specialists in the field. The analysis of the 2006 data was used to update the examination specifications and determine the content of the current examination. The examination content outline can be found on Page 19.

The certification examination is composed of up to 175 multiple-choice questions. Examinees will have four and one-half (4½) hours to complete the examination.

Some questions include interpretation of images. Each question contains four options, or choices, only one of which is the correct, or best, answer.

The examination questions were developed by the CBNC Examination Committee, an expert panel of the CBNC, under the guidance of Knapp & Associates International, Inc. The examination question pool is updated on a regular basis to reflect current knowledge. Individual questions are modified or deleted based on statistical analysis of the examination.

The CBNC retains Knapp & Associates International, Inc. of Princeton, NJ, to provide assistance in the development of the examinations. Knapp & Associates International is a research and development firm that serves certification bodies by planning, developing, and administering assessment procedures and programs designed to measure professional competence.

### Examination Format and Content

The format of the 2009 examination in nuclear cardiology will be electronic, and administered on computer workstations. CBNC has contracted with Prometric to host the CBNC exam in its test centers at locations around the world.

Candidates will be monitored by no less than one (1) proctor for every twenty (20) candidates at all times, using at least one (1) of the following methods:

- Direct viewing of Testing area, and/or
- Video monitoring, with or without audio.



#### ABOUT THE CERTIFICATION EXAM

- The format is computer-based
- There are up to 175 multiple choice questions
- Examinees have 4 ½ hours to complete the exam
- Images may be color or grayscale; motion or static
- Exams are administered in English
- Testing sites are located around the world



#### DETERMINATION OF SCORE

Candidates are measured against a standard of knowledge, not against the performance of other individuals taking the exam.

## Determination of Passing Score and Reporting

The passing score is based on an expected level of knowledge; it is not related to the distribution of scores obtained during a particular examination administration (i.e., the CBNC examinations are not “graded on a curve”). Thus, in any given year, a candidate has the same chance of passing the examination whether the group taking the examination at that time tends to have high scores or low scores. In other words, each candidate is measured against a standard of knowledge, not against the performance of the other individuals taking the examination.

Approximately ten (10) weeks following the administration of the examination, CBNC will mail each candidate his or her examination results. Results will not be available onsite at the test centers and RESULTS WILL NOT BE GIVEN OVER THE TELEPHONE OR BY FAX.

Following determination of the passing score, all candidates will receive: (a) a letter indicating the number of correct questions needed to pass the examination and the number of questions they answered correctly, and (b) a diagnostic report showing their performance in each content area. Candidates who pass the examination will receive a certificate suitable for framing. These will be mailed by March 15, 2010.

## GENERAL POLICIES

### Compliance with Test Center Rules

Candidates must at all times comply with posted test center rules and regulations, and with security requirements of CBNC and Prometric, published on the CBNC website ([www.cbnc.org](http://www.cbnc.org)), and at Prometric test centers. Candidates who do not comply with test center rules will be excused from testing and escorted from the testing center. No refund will be made. In addition, candidates determined to have engaged in prohibited behavior will not have their exams scored and will be barred from testing for three years.

### Nondiscrimination Policy

The CBNC does not discriminate against any person on the basis of age, gender, sexual orientation, race, religion, national origin, medical condition, physical disability, or marital status.

### Candidates who Fail the Exam Three or More Times

Candidates who have not succeeded in passing the examination after three (3) attempts are required to show proof of additional training in nuclear cardiology. Training must be a minimum of 4 weeks (160 hours and need not be consecutive weeks) with a minimum of 100 nuclear cardiology cases read, documented by receipt of a preceptor letter. (Refer to the [www.cbnc.org](http://www.cbnc.org) website for “Additional Training Preceptor Letter Template”.) The preceptor must be an Authorized User certified by the CBNC, ABNM or ABR or the osteopathic equivalent. The additional training shall begin after the date of the third failed examination attempt. This training will allow a candidate to sit for three consecutive years. In addition, the candidate must document 25 hours of Category 1 CME in nuclear cardiology specific activities taken to remedy deficiencies. The courses must have been taken within the last 18 months from the time of application.

CME documentation must be included with the application.

Candidates who have not succeeded in passing the examination after six (6) attempts must re-take Level 2 nuclear cardiology training in an ACGME or AOA accredited institution.

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## **Reapplication Policy**

Candidates who met CBNC board certification requirements under prior eligibility rules but who did not pass the exam shall have two additional attempts to pass under the eligibility rules that existed at the time of the initial eligibility. Excepted from this three year eligibility are any new requirements put into effect by the U.S. Nuclear Regulatory Commission with regard to 10 CFR Part 35.290 training and experience requirements. Also excepted are requirements for candidates who have failed more than three (3) or more than six (6) times.

Candidates must provide all documentation and payment in the year of application.

## **Diplomate Responsibilities**

It is the responsibility of CBNC Diplomates to keep the CBNC office informed of address and/or name changes. It is also the responsibility of CBNC Diplomates to maintain their certified status by applying at the appropriate time in order to recertify during their ten-year certification period. CBNC will make a good faith effort to contact Diplomates regarding changes in policy and procedure and to provide application material to recertify; however, the onus is on Diplomates to maintain their certification status.

## **Revocation of Certification**

The CBNC Board of Directors may, at its discretion, revoke certification if the Diplomate fails to maintain moral, ethical or professional behavior satisfactory to the Board or engages in misconduct that adversely affects professional competence or integrity. This includes, but is not limited to, the Diplomate losing his/her license to practice medicine either through suspension or termination or conviction of a felony or other serious crime.

## **Audit Policy**

To maintain the integrity of its certification program, CBNC randomly audits a number of candidate applications annually. CBNC may audit applications for up to one year following notification of successful certification or recertification. Candidates whose applications are audited will be asked to submit documentation supporting his/her eligibility to sit for the exam.

In addition, CBNC may request clarification or conduct an audit during review of an application. In such cases, candidates will be contacted by CBNC and asked to submit additional information.

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## 2009 CERTIFICATION ELIGIBILITY REQUIREMENTS FOR CANDIDATES RESIDING IN THE UNITED STATES

(all criteria must be met to receive a U.S. certificate)

### Requirement 1: Licensure

Applicants must, at the time of application, hold a current, unconditional, unrestricted license to practice medicine in the U.S. and must provide a copy of the current license.

### Requirement 2: Board Certification

Applicants must be physicians who, at the time of application, are Board Certified in Cardiology, Nuclear Medicine or Radiology by a board which holds membership in either the American Board of Medical Specialties or the Bureau of Osteopathic Specialists of the American Osteopathic Association and must provide a copy of the current board certification.

- Applicants in an ACGME or AOA fellowship or residency program with Internal Medicine Board Certification may apply and must provide a copy of their current Internal Medicine board but will not receive a CBNC certificate upon successful completion of the exam or be listed on the roster until they provide documentation of successful certification in Cardiology, Nuclear Medicine or Radiology which must happen within 3 years of sitting for the CBNC exam. The certification period will be 10 years from the date of the successful nuclear cardiology exam.
- Applicants who are currently NOT boarded AND in an ACGME or AOA fellowship or residency program may apply, but will not receive a CBNC certificate upon successful completion of the exam or be listed on the roster until they provide documentation of successful certification in Cardiology, Nuclear Medicine or Radiology which must happen within 3 years of sitting for the CBNC exam. The certification period will be 10 years from the date of the successful nuclear cardiology exam.

### Requirement 3: Training/Experience in the provision of Nuclear Cardiology Services (training must be completed prior to application)

#### Sole Pathway (effective beginning in 2009)

- Candidates must document Level 2 training in nuclear cardiology in accordance with ACCF/ASNC COCATS Guidelines in Nuclear Cardiology, Revised 2008. Training must occur at a center that has an ACGME or AOA-accredited training program in Cardiovascular Disease, Nuclear Medicine, or Radiology. All applicants must document Authorized User status or a minimum of 80 hours of Classroom and Laboratory Training (CLT) in radiation safety that meets the NRC topic requirements. The CLT hours must have been taken no longer than seven (7) years prior to the date of the exam for which you are applying. CLT must be repeated if more than 7 years have elapsed since initial CLT & applicant is currently not an Authorized user. Classroom and Laboratory Training (CLT) may be taken externally from the program. If CLT hours were taken directly within the fellowship program, the preceptor must state this in the preceptor letter. (See language on page 9)
- A preceptor letter must be provided from an individual who can verify the candidate's total training in nuclear cardiology. (See templates). The letter must document the dates of the applicant's training and be dated no earlier than 36 months prior to application. A preceptor must be one of the following:
  - Program Director of an accredited fellowships or residency in Cardiovascular Disease, Nuclear Medicine, or Radiology.
  - Director of Nuclear Cardiology laboratory at an institution with an accredited fellowships or residency in Cardiovascular Disease, Nuclear Medicine, or Radiology.
  - If the preceptor is not an authorized user, a separate letter from an authorized user at the training institution must be provided to verify that the candidate has appropriate training in radiation safety.
- If training was completed seven (7) or more years prior to the date of the CBNC exam for which you are applying, you must provide:
  - documentation of at least 300 cases within the last 24 months at time of application.
  - 25 CME Category I hours in nuclear cardiology taken within the last 36 months at time of application. See [Guidance on CME Credit](#)

**Candidates who did not receive nuclear cardiology training within the context of an accredited residency or fellowship program and who have sat previously for the CBNC exam must document: [NO NEW CANDIDATES]**

- A preceptor letter must be provided (see template on page 9). The preceptor must be certified by one of the following Boards: CBNC, ABNM, ABR, AOBNM or AOBR. ABIM certification alone does not qualify. If the preceptor is not an Authorized User, a separate letter from an Authorized User must be provided to verify that the candidate has had appropriate training in

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radiation safety. The preceptor letter must be dated no earlier than 36 months prior to application and must document the training dates of the applicant.

- Authorized User status (e.g., by copy of current facility radioactive materials license listing the applicant's name) or Authorized User eligibility (e.g., by certificate of completion of a course with a minimum of 80 hours which included all topic areas required by the Nuclear Regulatory Commission, taken within 7 years of application).
- Ongoing experience as evidenced by interpretation of a minimum of 300 cases (current Nuclear Cardiology COCATS requirement for Level 2) in the preceding 24 months of application; and
- At least 25 hours of CME specific to nuclear cardiology within the preceding 36 months of application.

NOTE: All U.S. candidates must submit evidence of either Authorized User status, (e.g., a copy of the facility's radioactive materials license listing the candidate's name), OR of Authorized User eligibility, (e.g., a certificate of completion of a radioisotope handling and radiation safety course with a minimum of 80 hours which included all topic areas required by the Nuclear Regulatory Commission and dated within 7 years of application).

If the Classroom and Laboratory Training hours were an integral part of the fellowship program, the candidate's preceptor should include the following text in his/her preceptor attestation: (Must have been completed within 7 years of application.)

**Dr. \_\_\_\_\_ completed a minimum of 80 hours of Radioisotope Handling Classroom and Laboratory Training which meets the requirements of the Nuclear Regulatory Commission within his/her fellowship program.**

**\* NOTE: The preceptor verifying training/experience must include in the preceptor letter his or her NRC or Agreement State License Number.**

Training and experience requirements for licensure by the Nuclear Regulatory Commission (NRC) or Agreement States vary from state to state; therefore, candidates seeking licensure should check with their regional NRC office or the office responsible for licensure in the Agreement State in which they practice. Information is also available on the NRC website: [www.hsr.d.gov/](http://www.hsr.d.gov/).

#### **Guidelines for Documentation:**

1. Preceptor and/or AU:
  - a) must have the required credentials listed on page 7 at the program where the candidate trained; OR must have had the credentials listed on page 7 and directed the candidate's nuclear cardiology training (e.g. a former program director)
  - b) must be in a position to verify and attest to the candidate's training
2. CLT:
  - a) CLT may be separated temporally from the rest of training
  - b) CLT must be repeated if more than 7 years have elapsed since initial CLT & applicant is currently not an Authorized user.
3. Documentation of 300 cases (when applicable):
  - a) Documentation may be obtained from:
    - Lab Director
    - Hospital or practice administrator (MD or non-MD)
  - b) A notarized letter attesting to number of cases constitutes the required documentation.
  - c) Cases must be within 24 months preceding application.
4. Time limit on letters of documentation
  - a) Preceptor and other letters must be dated within (36 months) of application
  - b) Preceptor letters older than (36 months) may be submitted with the following supplemental documentation: a letter from a current Authorized User program director or lab director (from training institution) verifying that the information in the original letter is accurate.

#### **Special Note:**

- CBNC is not accepting NEW applicants whose Level 2 equivalent was completed by experience.
- Preceptor letters and other supporting documentation must accompany application. Preceptor templates may be found and completed on the CBNC website ([www.cbnc.org](http://www.cbnc.org)). Preceptors are STRONGLY encouraged to use these.
- Preceptor letters must be dated no earlier than 36 months prior to application.
- Preceptor letters must be on organizational letterhead and the author's relationship to the applicant provided (e.g., Program Director).
- The letter must include the applicant's nuclear cardiology training dates.
- If the preceptor is not an Authorized User, separate documentation from an Authorized User at the training institution must be provided to verify that the candidate has had appropriate training in radiation safety.

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## 2009 PRECEPTOR LETTER TEMPLATES FOR CANDIDATES RESIDING IN THE UNITED STATES

See Preceptor Requirements on Pages 7 & 8

### For Candidates who acquired Level 2 training a through fellowship or residency program

Letter on organizational letterhead dated within the last 36 months and addressed to: Certification Board of Nuclear Cardiology

Dr. \_\_\_\_\_ has completed a nuclear cardiology training program that meets the requirements for Level 2 as outlined in the ACCF/ASNC COCATS Guidelines for Nuclear Cardiology, revised 2008, within an accredited fellowship or residency program.

Dr. \_\_\_\_\_ completed level 2 nuclear cardiology training between the dates of \_\_\_\_\_ and \_\_\_\_\_.

I attest that Dr. \_\_\_\_\_ is competent to independently function as an authorized user under NRC 10 CFR 35.200 uses.

If the Radioisotope Handling Classroom and Laboratory Training hours were a direct part of the fellowship program, the Candidate's preceptor should include the following text in his/her preceptor attestation:

Dr. \_\_\_\_\_ completed a minimum of 80 hours of Radioisotope Handling Classroom and Laboratory Training which meets the requirements of the Nuclear Regulatory Commission as an integral part of his/her fellowship/residency program.

Sincerely,

[Signature of Preceptor] [Printed name of Preceptor] [Title & Relationship to Applicant] [NRC or Agreement State License Number]

### For Candidates who acquired Level 2 Training equivalent through experience (who did not receive nuclear cardiology training within the context of an accredited residency or fellowship program) AND who have sat previously for CBNC.

Letter on organizational letterhead dated within the last 36 months and addressed to: Certification Board of Nuclear Cardiology

Dr. \_\_\_\_\_ has completed training and/or experience that meets the requirements for Level 2 as outlined in the ACC/ASNC COCATS Guidelines for Training in Nuclear Cardiology, revised 2008.

Dr. \_\_\_\_\_ completed Level 2 nuclear cardiology training or equivalent between the dates of \_\_\_\_\_ and \_\_\_\_\_.

I attest that Dr. \_\_\_\_\_ is competent to independently function as an authorized user under NRC 10 CFR 35.200 uses.

Sincerely,

[Signature of Preceptor] [Printed name of Preceptor] [Title & Relationship to Applicant] [NRC or Agreement State License Number] [CBNC, ABNM, ABR, AOBNM or AOBR Certificate Number]

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## 2009 ELIGIBILITY REQUIREMENTS FOR CANDIDATES RESIDING OUTSIDE THE UNITED STATES OR WITH TRAINING FROM OUTSIDE THE UNITED STATES

**NOTE:** Candidates who meet any criteria from outside the U.S. will receive a non-U.S. certificate when they pass the exam. These certificates are not transferable to U.S. certificates at any time. If an individual relocates to the U.S., and subsequently satisfies all requirements for a U.S. candidate, he/she must retake the examination to obtain a U.S. certificate.

### Requirement 1: Licensure

Applicants must, at the time of application, hold a current, unconditional, unrestricted license to practice medicine and must provide a copy of the current license.

### Requirement 2: Training/Experience in the provision of Nuclear Cardiology Services (must be complete at the time of application)

**Pathway 1** - Applicants who have completed training in cardiology, nuclear medicine or radiology after July 1, 1998 must submit a statement written on organizational letterhead written within the last 36 months from your preceptor stating that your training in nuclear cardiology was equivalent to ACCF/ASNC COCATS Guidelines for Nuclear Cardiology Training, revised 2008, Level 2 (minimum). Your preceptor may be:

- Program Director of a fellowship or residency in Cardiovascular Disease, Nuclear Medicine, or Radiology.
- Director of Nuclear Cardiology laboratory at an institution with a fellowship or residency in Cardiovascular Disease, Nuclear Medicine, or Radiology.

**Pathway 2** - Applicants who have completed training in cardiology, nuclear medicine or radiology prior to July 1, 1998 must submit a statement from a preceptor, written on organizational letterhead within the last 36 months, that confirms training and/or experience equivalent to ACCF/ASNC COCATS Guidelines for Nuclear Cardiology Training, revised 2008, Level 2 (minimum). The letter must also verify ongoing experience as evidenced by interpretation of a minimum of 300 cases (current Nuclear Cardiology COCATS requirement for Level 2 training) in the 24 months preceding application.

### Special Notes:

- Preceptor letters and other supporting documentation are to accompany application. Preceptor templates may be found and completed on the CBNC website ([www.cbnc.org](http://www.cbnc.org)). Preceptors are STRONGLY encouraged to use these.
- Preceptor letters must be dated no earlier than 36 months prior to application.
- Preceptor letters must be on organizational letterhead and state the author's relationship to the applicant (e.g., Program Director)
- The letter must include the applicant's nuclear cardiology training dates.

## 2009 PRECEPTOR LETTER TEMPLATE FOR NON U.S. CANDIDATES

Dr. \_\_\_\_\_ has completed training and/or experience that meets the requirements for Level 2 as outlined in the ACC/ASNC COCATS Guidelines for Training in Nuclear Cardiology, revised 2008.

Dr. \_\_\_\_\_ completed Level 2 nuclear cardiology training between the dates of \_\_\_\_\_ and \_\_\_\_\_.

If the applicant completed nuclear cardiology training equivalent to Level 2 prior to July 1, 1998, the letter must also state:

I verify that Dr. \_\_\_\_\_ has completed a minimum of 300 nuclear cardiology cases in the last 24 months.

Sincerely,

[Signature of Preceptor] [Printed name of Preceptor] [Title & Relationship to Applicant]

Final decision on eligibility cannot be made until staff reviews ALL documentation. Staff will do its best to answer questions by phone, but staff reserves the right to make final determination upon review of all relevant material.

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## APPLYING FOR THE EXAMINATION

### Attention Applicants:

It is CBNC Board policy that applicants must have completed ALL requirements before submitting an application.

For questions on your application, contact the CBNC office. Staff are there to assist you.

Applicants who apply to sit for the CBNC certification or recertification examinations must submit complete applications and all required supporting documents. Supporting documents are listed on the Application Checklist Page.

Do not send your application until all elements have been collected and are complete. Incomplete applications WILL incur a resubmission fee of \$50 (Fifty Dollars).

Candidates who submit an application that has errors, is incomplete or missing any supporting documentation will be contacted by CBNC detailing what is needed to make the application complete. To become eligible, applicants must submit the required information by the date indicated in the letter and pay the \$50 resubmission fee.

It is the applicants' responsibility to assure that he or she meet all requirements and to supply the required and correct material to document this. It is staff's responsibility to review the material and determine whether eligibility has been met. It is not the responsibility of CBNC staff to research and/or obtain material for applicants. Staff are happy to respond to questions or review documents in advance of application to help applicants be certain their materials are correct.

### Guidance on Application Process and Test Center Information

The 2009 examinations will be taken in Prometric testing centers. CBNC shares Prometric test centers with many other certification and licensure programs. The earlier you apply, the sooner your application will be reviewed for eligibility and the sooner you will receive an Authorization to Test (ATT) letter (if eligible) so that you can schedule the exam for the date, time and location of your convenience within the testing window.

**Applications must be submitted directly to the CBNC.** Once eligibility has been determined, candidates will receive a letter indicating that they may register for a seat time at one of Prometric's test centers. Only those with complete applications will receive ATT letters with the information necessary to schedule a seat. Those with incomplete applications will be contacted on what is required to complete his or her application. Applicants are urged to provide a valid email address so that staff can contact applicants promptly with any questions and to receive automated updates on the status of their applications.

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## 2009 Testing Window and Test Center Locations

The 2009 Certification and Recertification examinations will be offered during a testing window between Monday, November 30 and Saturday, December 5, 2009. Tests may be scheduled for any available Prometric seat during hours of operation in the testing window.

Prometric currently has more than 300 test centers throughout the United States, U.S. territories and Canada, as well as locations throughout the world available to host the CBNC examinations. Candidates can review testing center locations on the Prometric website ([www.prometric.com](http://www.prometric.com)). Workstations at all Prometric test centers available to host the CBNC exam conform to Board-approved specifications.

Candidates are urged to apply early. Candidates will not be able to schedule their test time until their application is complete and their Authorization to Test Letter (ATT) has been received. ATT letters will not be faxed or emailed. Prometric will assess a \$25 rescheduling fee for appointments rescheduled between 3-30 days of examination in the U.S., U.S. Territories & Canada and 6-30 days outside the U.S., U.S. Territories and Canada.

### Filing Your Application

CBNC reserves the right to limit the number of candidates taking the examination. Limitations due to seating availability at Prometric test centers during CBNC's testing window may also apply.

Only the application form found in this Candidate Bulletin or on CBNC's website can be accepted for application to sit for the 2009 examination. **Before mailing your application, please review carefully the information and specific instructions included with this Bulletin.**

### Application Fees for the 2009 Certification Examination

For regular applications, your complete application and all necessary papers, plus the fee of \$895, must be postmarked or overnight shipment dated NO LATER THAN July 10, 2009. For second applications, your complete application and all necessary papers plus the fee of \$995 must be postmarked or overnight shipment dated NO LATER THAN September 18, 2009 and late applications, your complete application and all necessary papers plus the fee of \$1,095 must be postmarked or overnight shipment dated NO LATER THAN October 9, 2009.

Payment of the examination fee must accompany your application. Payment may be made by check or money order and must be made payable to the Certification Board of Nuclear Cardiology. American Express, MasterCard, VISA and Discover payments are also accepted and may be made by using the form on the Checklist page (Page 21). Candidates whose checks are returned for non-sufficient funds will be subject to a \$35 fee. Incomplete applications require a \$50 resubmission fee to be eligible.

Refunds in the amount of \$795 will be made in response to written, signed requests until November 19, 2009. No refunds will be made after that date. Non-sufficient funds, administrative fees, late fees and resubmission fees will not be refunded.

If for some reason you fail to meet the eligibility requirements, your application and documentation will be returned to you along with a refund of \$795. For questions on eligibility, please contact the CBNC office.

Prometric will assess a \$25 rescheduling fee for appointments rescheduled between 3-30 days of examination in the U.S., U.S. Territories & Canada and 6-30 days outside the U.S., U.S. Territories and Canada.

## Special Testing Arrangements

CBNC, in accordance with the Americans With Disabilities Act (ADA, 1990), provides reasonable and appropriate accommodations for disabled individuals who supply appropriate documentation.

Reasonable accommodations provide disabled candidates with a fair and equal opportunity to demonstrate their knowledge and skill in the functions being measured by the exam. Reasonable accommodations do not include actions that alter the purpose or nature of the exam. Reasonable accommodations are generally provided for candidates who have a physical or mental impairment that substantially limits that person in one or more major life activities (e.g., walking, talking, hearing and performing manual tasks); have a record of such physical or mental impairment; or is regarded as having a physical or mental impairment.

Reasonable accommodations are decided upon based on the individual's specific request, disability, documentation submitted and the appropriateness of the request. The most frequent requests involve providing the candidate with extended time and/or a separate room. No additional cost is placed on the candidate.

Candidates requesting special accommodations must submit CBNC's Request for Special Accommodations Form with their application (refer to [www.cbnc.org](http://www.cbnc.org) for form). Medical documentation from an appropriate licensed professional or certified specialist who diagnosed the disability of specific needs must accompany the request. The documentation must be submitted on the professional's letterhead, provide a diagnosis of the disability and the test(s) used to determine the disability.

Prometric cannot comply with special accommodation requests made by candidates taking the examination outside the U.S., U.S. territories or Canada where local operating conditions or local laws and customs render such request unlawful, impossible or economically unfeasible to perform.

Candidates requiring special testing arrangements must inform CBNC relative to their needs in writing at the time of application.



### SPECIAL TESTING ARRANGEMENTS

Candidates requiring special testing arrangements must inform CBNC relative to their needs at the time of application. Refer to [www.cbnc.org](http://www.cbnc.org) for form.



### SCHEDULING AN EXAM TIME

Candidates will be able to schedule their exam once their eligibility has been established. Candidates will receive an ATT letter with instructions on how to schedule an exam time within the 2009 window. Prometric will assess a \$25 rescheduling fee for appointments rescheduled between 3-30 days of examination in the U.S., U.S. Territories & Canada and 6-30 days outside the U.S., U.S. Territories and Canada.

## After Receipt of your Application at CBNC

Following receipt and review of their applications, eligible candidates will receive an Authorization to Test (ATT) letter. The ATT document will be accompanied by a booklet of information on how to schedule your examination appointment, pre and post exam policies, including cancellation policies, and other critical exam information. The ATT letter and booklet are important documents which candidates will want to safeguard through the exam date and beyond, to refer to in case of question on policy or procedure.

Applicants with incomplete applications will not receive an ATT letter and will not be able to schedule an exam until their applications are complete. Applications will be deemed ineligible for any of the following reasons:

- Failure to meet eligibility requirements.
- Failure to meet deadlines.
- Failure to submit a complete application, including all supporting documents.
- Applicants who submit incomplete applications may have an opportunity to correct deficiencies if time permits; however, they will be assessed a \$50 resubmission fee. Applicants will be contacted; those who do not rectify the application deficiencies by the date indicated will be deemed ineligible and issued a refund of \$795. Non sufficient funds, administrative fees, late fees and resubmission fees will not be refunded.

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## Scheduling an Examination Seat and Time

To obtain your preferred testing date, time and location, candidates are encouraged to schedule an exam appointment as soon as the Authorization to Test (ATT) letter confirming successful application for the examination is received. This letter will include instruction for scheduling a seat and time to sit for the CBNC examination between test window dates of November 30 - December 5, 2009. **This document will include your full name; the test you have been approved to take; and your CBNC Candidate number. You will need these data exactly as printed on your ATT letter.**

**You must register for a seat and time no later than sixty (60) days prior to the exam window.** After that time, seats for the CBNC examinations cannot be guaranteed by Prometric. Seats are limited; those who register early will have the best opportunities to schedule their exam at a time and location convenient to them. Prometric will assess a \$25 rescheduling fee for appointments rescheduled between 3-30 days of examination in the U.S., U.S. Territories & Canada and 6-30 days outside the U.S., U.S. Territories and Canada.

## Exam Format Tutorial

CBNC has prepared a tutorial to help candidates prepare for the examination format. The CBNC Examination Preparation Tutorial is available at no cost on CBNC's website ([www.cbnc.org](http://www.cbnc.org)). This demonstration tutorial mimics the computer screens as examinees will see them during the exam and allows candidates to review buttons and graphics to understand how to navigate through the electronic format. Candidates should not expect to be able to learn electronic exam navigation onsite at the exam, and should arrive having reviewed the tutorial previously.

This tutorial does not address examination content.

## Cancelling Your Application/Examination

To withdraw from participation in the exam, you must cancel **no later than Thursday, November 19, 2009**. If you have scheduled your exam appointment, you must first cancel with Prometric, either online or by contacting the Prometric Scheduling (800-371-1989 in the U.S.), **no later than November 19, 2009**. You must then notify CBNC **in writing, with signature**, and provide your Prometric cancellation number in order to receive a refund of \$795. Non sufficient funds, administrative fees, late fees, and resubmission fees will not be refunded. Signed, faxed cancellations are accepted.

If you cancel after November 19, 2009, or for any reason do not appear at the exam site where you have registered to sit for the examination, you will forfeit all fees paid and no refund will be provided.

## Errors and Disruptions in Examination Administration

Occasionally issues arise in the creation, administration, and scoring of examinations. For example, power failures, hardware and software problems, human errors, or weather problems may interfere with some part of the examination process or delay the reporting of scores. When such problems occur, CBNC may provide the affected candidates with an opportunity to take the examination at the next scheduled examination date for a reduced or waived examination fee. This shall be the candidate's sole remedy. CBNC shall not be liable to any candidate for inconvenience, expense, or other damage, including consequential, incidental, special, or exemplary damages, caused by any problems in the creation, administration, or scoring of an examination, including delays in score reporting. In no circumstance will CBNC reduce its standards or overturn the candidate's score as a means of correcting a problem in examination administration.

Issues or problems arising during the administration of examinations must be reported to Prometric test center staff by the candidate experiencing the issue or problem at the time the exam is being administered and prior to the candidate departing the test center site on the day the examination is scheduled. Candidates must also notify CBNC of any issues or problems with the administration of the examination within 48 hours of candidate's scheduled examination time.

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## COCATS Guidelines for Level 2 Training in Nuclear Cardiology

### COCATS GUIDELINES (Revised 2008)

#### AMERICAN COLLEGE OF CARDIOLOGY FOUNDATION/ AMERICAN SOCIETY OF NUCLEAR CARDIOLOGY COCATS GUIDELINES FOR TRAINING IN NUCLEAR CARDIOLOGY

The COCATS Guidelines were revised in 2008. Preceptor Attestations referencing this document are required for certification exam applicants.

##### Overview of Nuclear Cardiology Training

Training in nuclear cardiology at all levels should provide an understanding of the indications for specific nuclear cardiology tests, the safe use of radionuclides, basics of instrumentation and image processing, methods of quality control, image interpretation, integration of risk factors, clinical symptoms and stress testing and the appropriate application of the resultant diagnostic information for clinical management. Training in nuclear cardiology is best acquired in Accreditation Council for Graduate Medical Education (ACGME) approved training programs in cardiology, nuclear medicine or radiology. An exception to this ACGME requirement is the didactic and laboratory training in radiation safety and radioisotope handling that may be provided by qualified physicians/scientists in a non-ACGME program when such a program is not available as part of the clinical ACGME training program. For laboratories that provide training to cardiology fellows, accreditation by the Intersocietal Commission for the Accreditation of Nuclear Laboratories (ICANL) is also recommended.

Didactic, clinical case experience and hands-on training hours require documentation in a logbook<sup>1</sup> and having the trainee's name appear on the clinical report or having some other specific record. The hours need to be monitored and verified by the nuclear cardiology training preceptor.

##### Specialized Training - Level 2 (Minimum of 4 Months)

Fellows who wish to practice the specialty of nuclear cardiology are required to have at least 4 months of training. This includes a minimum of 700 hours of radiation safety training in nuclear cardiology. There needs to be didactic, clinical study interpretation, and hands-on involvement in clinical cases. In training programs with a high volume of procedures, clinical experience may be acquired in as short a period as 4 months. In programs with a lower volume of procedures, a total of 6 months of clinical experience will be necessary to achieve Level 2 competency. The additional training required of Level 2 trainees is to enhance clinical skills, knowledge, and hands-on experience in radiation safety and to qualify them to become authorized users of radioactive materials in accordance with the regulations of the Nuclear Regulatory Commission (NRC) and/or the Agreement States.

##### Didactic Program

*Lectures and self-study.* The didactic training should include in-depth details of all aspects of the procedures listed in Table 1 (see page 24). This program may be scheduled over a 12- to 24-month period concurrent and integrated with other fellowship assignments.

*Radiation Safety.* Classroom and laboratory training need to include extensive review of radiation physics and instrumentation, radiation protection, mathematics pertaining to the use and measurement of radioactivity, chemistry of byproduct material for medical use, radiation biology, the effects of ionizing radiation and radiopharmaceuticals. There should be a thorough review of regulations dealing with radiation safety for the use of radiopharmaceuticals and ionizing radiation. This experience should total a minimum of 80 hours and be clearly documented.

##### Interpretation of Clinical Cases

Fellows should participate in the interpretation of all nuclear cardiology imaging data for the 4-6 month training period. It is imperative that the fellows have experience in correlating catheterization or CT angiographic data with radionuclide-derived data for a minimum of 30 patients. A teaching conference in which the fellow presents the clinical material and nuclear cardiology results is an appropriate forum for such an experience. A total of 300 cases should be interpreted under preceptor supervision from direct patient studies.

##### Hands-on Experience

*Clinical cases.* Fellows acquiring Level 2 training should have hands-on supervised experience in a minimum of 35 patients: 25 patients with myocardial perfusion imaging and 10 patients with radionuclide angiography. Such experience should include pretest patient evaluation, radiopharmaceutical preparation (including experience with relevant radionuclide generators and CT systems), performance of studies with and without attenuation correction, administration of the dosage, calibration and setup of the gamma camera and CT system, setup of the imaging computer, processing the data for display, interpretation of the studies and generating clinical reports.

*Radiation safety work experience.* This experience should total 620 hours and be acquired continuously during training in the clinical environment where radioactive materials are being used and under the supervision of an authorized user who meets the NRC requirements of Part 35.290 or Part 35.290(c)(ii)(G) and 35.390 or the equivalent Agreement State requirements, and must include:

- Ordering, receiving and unpacking radioactive materials safely and performing the related radiation surveys;
- Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters;
- Calculating, measuring and safely preparing patient or human research subject dosages;

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## NUCLEAR CARDIOLOGY COCATS GUIDELINES, continued

- d) Using administrative controls to prevent a medical event involving the use of unsealed byproduct material;
- e) Using procedures to safely contain spilled radioactive material and using proper decontamination procedures;
- f) Administering dosages of radioactive material to patients or human research subjects; and
- g) Eluting generator systems appropriate for preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radionuclide purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs.

### Additional experience

The training program for Level 2 training must also provide experience in computer methods for analysis. This should include perfusion and functional data derived from thallium or technetium agents and ejection fraction and regional wall motion measurements from radionuclide angiographic studies.

**Table 1. Classification of Nuclear Cardiology Procedures**

- 1) Standard nuclear cardiology procedures
  - a) Myocardial perfusion imaging
    - i) with technetium-99m agents and/or thallium-201, with or without attenuation correction
    - ii) with rubidium-82 and/or nitrogen-13 ammonia
    - iii) Planar with technetium-99m agents and/or thallium-201
    - iv) gating of perfusion images for assessment of global and regional ventricular function
  - v) Imaging protocols vi) Stress protocols
    - 1) Exercise stress
    - 2) Pharmacologic stress
  - vi) Viability assessment including reinjection and delayed imaging of thallium-201 and/or metabolic imaging where available
  - b) Equilibrium radionuclide angiography and/or “first-pass” radionuclide angiography at rest
  - c) Qualitative and quantitative methods of image display and analysis
- 2) Less commonly used nuclear cardiology procedures
  - a) Combined myocardial perfusion imaging with cardiac CT for attenuation correction or anatomic localization
  - b) Equilibrium radionuclide angiography and/or “first-pass” radionuclide angiography during exercise or pharmacologic stress
  - c) Metabolic imaging using single photon and/or positron emitting radionuclides
  - d) Myocardial infarct imaging
  - e) Cardiac shunt studies

To receive a copy of the complete COCATS Guidelines for Training in Nuclear Cardiology, visit the American Society of Nuclear Cardiology Website: [www.asnc.org](http://www.asnc.org).

<sup>1</sup> Note: These logbooks are not to be submitted with the CBNC application.

<sup>2</sup> This is a two part requirement. Candidates must complete both the requisite number of hours AND all topic areas required by the NRC and Agreement States. Completing 100 hours of a 200 hour course does not necessarily meet this requirement. Contact the CBNC Office for guidance.

### References

A list of references and guidelines that may be helpful in reviewing for the examination can be found on CBNC’s website ([www.cbnc.org](http://www.cbnc.org)). The CBNC does not intend the list to imply endorsement of these specific references, nor are the test questions taken from these sources. Links to publishers and associations are provided from the Reference page on CBNC’s website.

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## GUIDANCE ON COUNTING CME CREDIT HOURS FOR ELIGIBILITY

U.S. certification candidates applying through experience (those who sat previously for the CBNC exam), or those whose training was completed more than 7 years at time of application, must document 25 hours of Continuing Medical Education (CME) SPECIFIC to nuclear cardiology taken within 36 months of application. The CME hours must be AMA PRA Category I CME. CME courses completed after the final application deadline cannot be accepted.

### What May Be Used:

- Any program **specific to nuclear cardiology** which carries AMA PRA category I CME credit, including but not limited to:  
Meetings and Conferences; Grand Rounds; Online Tutorials and Activities; Educational Products; Nuclear Cardiology Working Group meetings, if they carry CME credit
- Nuclear cardiology specific **sessions** at conferences such as ACC, AHA, SNM etc., including satellite sessions, may be counted.

### What May Be Used, depending:

- Courses that are on **mixed topics**, such as CT **and** Nuclear Cardiology or Overviews of Diagnostic Imaging, can count only the sessions where nuclear cardiology was a principle part of the session. **Examples:**
  - Nuclear Cardiology v Echo - What to use when - **YES**
  - Getting the most out of your CT data - **NO**
  - Recent Advances in Clinical Nuclear Cardiology and Cardiac CT Featuring Case Review With the Experts - **DEPENDS**
    - Nuclear sessions - YES
    - Nuclear/CT sessions - YES
    - Sessions exclusively on CT - NO

### What Cannot Be Used:

- Courses specific to non nuclear cardiology modalities only, including CT
- Industry sponsored sessions with no CME credit
- Case reviews with no CME credit
- ICNC, for those applying from the U.S. (ICNC sessions do not carry CME credit)

**Nota Bene:** Basic Radioisotope Handling courses (CLT) that carry CME credit can be counted toward this requirement if the courses were completed within 36 months of application.

**Nota Bene:** If the CME certificate does not state specifically that the course was nuclear cardiology related, CBNC staff may require a copy of the syllabus or program to review. CBNC shall have the final word on whether or not the activity meets the requirements.

## DOCUMENTING 300 NUCLEAR CARDIOLOGY CASES (CANDIDATES COMING IN UNDER EXPERIENCE OR CANDIDATES WHOSE TRAINING WAS COMPLETED MORE THAN 7 YEARS AGO AT TIME OF APPLICATION)

Certification candidates applying through experience or whose training was completed more than 7 years ago at time of application must document ongoing experience as evidenced by interpretation of a minimum of 300 nuclear cardiology cases (current COCATS requirement for Level 2) in the preceding 24 months. U.S. applicants must have a letter of documentation submitted.

Non U.S. applicants should have a statement of attestation on cases included on their preceptor statement, see page 10.

Following are letter templates for U.S. applicants. The templates are also found on CBNC's website ([www.cbnc.org](http://www.cbnc.org)) and applicants are strongly encouraged to make use of them.

NOTE: For the purpose of certification, a study performed and/or interpreted may be counted only once. For example, although add-on codes are used for gated SPECT studies, this should count as only 1 case.

The EXACT number of studies performed and interpreted must be provided. Applications containing approximated and/or rounded numbers will NOT be reviewed by the Eligibility Committee. **Letters documenting level of service must be an original, on appropriate letterhead and must be notarized.** These letters are to be included with the application.

**Template for Practice Based Physicians to Document 300 Cases**

To Whom It May Concern:

RE: *Doctor's Full Name*  
*Doctor's Date of Birth*  
*Doctor's Social Security Number*

This letter serves to confirm that Dr. \_\_\_\_\_ is a practicing cardiologist working in our private practice group. Our records indicate that *he/she* has performed and interpreted nuclear cardiology studies in the preceding 24 months as follows:

	2007	2008	2009
SPECT perfusion (any one of the following): 78460, 78461, 78464 or 78465	####	####	####
PET cardiac: 78491 or 78492 (multiple)	####	####	####
Radionuclide angiography (any one of the following): 78472, 78481, or 78482	####	####	####
Total nuclear cardiology studies:	####		

I certify that the numbers of studies provided above are exact numbers and are not rounded and/or estimates.

Sincerely,

Name

Title (President, CEO, or Business Manager)\*\*

Sworn and subscribed to before me on

\_\_\_\_\_

Notary Public

\*\*In the absence of a formal director of the nuclear cardiology laboratory or if the applicant is the director of nuclear cardiology, the letter should be written by the practice's President, CEO, or Business Manager or Chief Technologist.

**Template for Hospital Based Physicians to Document 300 Cases**

To Whom It May Concern:

RE: *Doctor's Full Name*  
*Doctor's Date of Birth*  
*Doctor's Social Security Number*

This letter serves to confirm that Dr. \_\_\_\_\_ is a practicing cardiologist working in our Nuclear Cardiology Lab. Our records indicate that *he/she* has performed and interpreted nuclear cardiology studies in the preceding 24 months as follows:

	2007	2008	2009
SPECT perfusion (any one of the following): 78460, 78461, 78464 or 78465	####	####	####
PET cardiac: 78491 or 78492 (multiple)	####	####	####
Radionuclide angiography (any one of the following): 78472, 78481, or 78482	####	####	####
Total nuclear cardiology studies:	####		

I certify that the numbers of studies provided above are exact numbers and are not rounded and/or estimates.

Sincerely,

Name

Title (Nuclear Cardiology Laboratory Director)\*\*

Sworn and subscribed to before me on

\_\_\_\_\_

Notary Public

\*\*In the absence of a formal director of the nuclear cardiology laboratory, the letter should be written by an appropriate supervising physician. If applicant is the Medical Director of the Nuclear Cardiology Laboratory, the letter should be from the Chief of Cardiology or the Chief of Staff of the Hospital.

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## EXAMINATION CONTENT OUTLINE

The following is a detailed outline of the nine major content areas of the examination, with an indication (in parentheses) of the approximate percentage of the examination devoted to each area:

### I. PHYSICS AND INSTRUMENTATION (10% )

- A. Basic physics as applied to clinical imaging (e.g., isotope decay, decay modes, generators, high energy imaging)
- B. Gamma cameras, collimation, and equipment quality control procedures
- C. Interactions of radiation with matter
- D. Attenuation correction, including transmission and CT methods

### II. RADIOPHARMACEUTICALS (8%)

- A. Radiotracer kinetics and characteristics (e.g., thallium-201 and technetium-99m)
- B. PET agents
- C. Red blood cell tagging

### III. RADIATION SAFETY (10%)

- A. Radiopharmaceutical receiving, handling, monitoring, and containment
- B. Handling radiopharmaceutical spills and waste
- C. Storage and calibration of radiopharmaceuticals
- D. Dosimetry and MIRD
- E. Radiation exposure and ALARA
- F. Governmental regulations

### IV. NUCLEAR CARDIOLOGY DIAGNOSTIC TESTS AND PROCEDURES/PROTOCOLS (15%)

- A. Image acquisition (e.g., first pass and equilibrium RNA, gating, SPECT)
- B. Image processing (e.g., filtering, reorientation, reconstruction, motion correction)
- C. Standard conventions as to how images are displayed
- D. Exercise and pharmacologic stress protocols
- E. Pharmacologic stress agents
- F. Artifacts and causes of false-positive and false-negative results
- G. Quality control of image processing
- H. Quality assurance of interpretation
- I. Quantitative aids to interpretation

### V. GENERAL CARDIOLOGY AS IT RELATES TO IMAGE INTERPRETATION (10%)

- A. Coronary anatomy and pathophysiology
- B. Unique characteristics of patient subgroups (e.g., patients with diabetes, elderly patients, male vs. female patients)
- C. Coronary angiography
- D. Stress physiology and testing; ECG and clinical parameters with rest and stress
- E. Measurements of left ventricle systolic and diastolic function
- F. Valvular disease, cardiomyopathy, hypertension, CHF, myocarditis
- G. Endothelial dysfunction
- H. Coronary artery disease

- I. Medical therapy, percutaneous coronary intervention, and coronary bypass surgery
- J. Indications for the use of alternative diagnostic techniques (Echo, MRI, coronary calcification, CT angiography)
- K. Bayes' theorem, pre- and post-test likelihood, sensitivity, specificity, and referral bias
- L. Statistical analyses (e.g., kappa value, Bland-Altman, ROC curves, Kaplan-Meier)
- M. Cost-effectiveness of diagnostic tests and principles of outcome studies

### VI. RISK STRATIFICATION (10%)

- A. Coronary artery disease
- B. Unstable angina
- C. Acute myocardial infarction
- D. Acute chest pain
- E. Candidates for noncardiac surgery
- F. Diabetes
- G. Chronic renal disease
- H. Women
- I. Post revascularization: percutaneous coronary intervention and CABG
- J. Evaluation of medical therapy

### VII. MYOCARDIAL PERFUSION IMAGING INTERPRETATION (22%)

- A. Interpretation of perfusion images with technetium-99m-labeled tracers and thallium-201
- B. Interpretation of images with rubidium-82 and N-13-ammonia
- C. Relationship of perfusion abnormalities to clinical, hemodynamic, ECG and exercise parameters
- D. Relationship of perfusion abnormalities to coronary anatomy
- E. Combined function-perfusion imaging

### VIII. VENTRICULAR FUNCTION IMAGING (10%)

- A. Rest and stress first-pass radionuclide ventriculography
- B. Rest and rest/stress equilibrium radionuclide ventriculography (planar and SPECT), including volume measurements and systolic and diastolic function
- C. ECG-gated SPECT myocardial perfusion imaging
- D. Effect of arrhythmia on ECG gating
- E. Implications of ventricular function testing for clinical management

### IX. MYOCARDIAL VIABILITY (5%)

- A. Thallium-201 imaging
- B. Technetium-99m imaging
- C. FDG imaging
- D. Outcome data related to myocardial viability
- E. Relationship to other imaging methods (e.g., echo, MRI)

## INSTRUCTIONS FOR COMPLETING THE 2009 CERTIFICATION APPLICATION FORM

- 1) **IMPORTANT NOTICE:** The 2009 exam will be given at Prometric test centers around the world during a testing window of **Monday, November 30- Saturday, December 5, 2009**. It is very important that your application form be completed carefully and accurately. Applicants will not receive an Authorization to Test (ATT) letter until the application is complete, including receipt of the Preceptor Letter. The ATT letter is required to schedule a test at Prometric test centers.
- 2) Meeting eligibility requirements is an essential part of CBNC's certification program and as important as passing the examination. The information provided on the application forms and in any required supplementary documents required should be completed legibly and in full.
- 3) Candidates must send the preceptor letters directly to the CBNC office with their application. Please make sure your preceptor has the most current templates, which are available on CBNC's website and in this Bulletin. This letter and the other supporting materials are used by CBNC to determine eligibility to sit for the examination. Incomplete or incorrect applications require a \$50 resubmission fee to be eligible.
- 4) If accepted, your acknowledgment (ATT letter) and your examination results will be sent to the mailing address (#3) indicated on the form. **If you change your address after you have been accepted to sit for the exam, it is most important that you notify the CBNC office in writing of this address change so correspondence will reach you promptly.**
- 5) Type or print clearly in ink all information requested, except signatures.
- 6) Checks returned to CBNC for non-sufficient funds are subject to a \$35 fee.
- 7) Candidates with Social Security numbers are not required to disclose them on the Application Form other than on a voluntary basis. The numbers are useful as a secondary check in matching registration information to scores to ensure that they are reported correctly.
- 8) Candidates are strongly encouraged to provide a valid email address so that CBNC staff can contact you if there are questions regarding your application. CBNC is pledged to contact applicants in a timely manner; however, CBNC is not responsible for mail and/or email lost or late due to incomplete, invalid or otherwise incorrect addresses. CBNC requires written and documented supporting materials in cases of dispute (e.g., delivery confirmation receipt, fax confirmation, etc.).
- 9) Information on the test centers is available on the CBNC website ([www.cbnc.org](http://www.cbnc.org)) and on the Prometric website ([www.prometric.com](http://www.prometric.com)).

Mail the completed checklist, application form, fee, and all documentation together to the address below. FAXED APPLICATIONS WILL NOT BE ACCEPTED.

**Certification Board of Nuclear Cardiology**  
101 Lakeforest Boulevard, Suite 401  
Gaithersburg MD 20877 USA  
Tel: +240.631.8151 • Fax: +240.631.8152  
Website: [www.cbnc.org](http://www.cbnc.org) • Email: [administration@cbnc.org](mailto:administration@cbnc.org)

**Examination Testing Window: Monday, November 30 - Saturday, December 5, 2009**

**Application Postmark Deadlines:**

Regular applications - Friday, July 10, 2009 (\$895)

Second applications - Friday, September 18, 2009 (\$995)

Late applications - Friday, October 9, 2009 (\$1095)

**Cancellation/Withdrawal Deadline:**

Thursday, November 19, 2009. After this date, no refunds can be made.

**Application and Test Fees:**

Regular applications (postmarked or overnight shipment dated by July 10, 2009) - \$895 (U.S. Funds).

Second Applications (postmarked or overnight shipment dated by September 18, 2009) - \$995 (U.S. Funds)

Late applications (postmarked or overnight shipment dated September 19 -October 9, 2009) - \$1,095 (U.S. Funds).

Incomplete applications, including those with missing or incorrectly worded documents, require a \$50 resubmission fee to be eligible. Checks returned to CBNC for non-sufficient funds are subject to a \$35 fee. Refunds in the amount of \$795 will be made until November 19, 2009. Non sufficient funds, administrative fees, late fees and resubmission fees will not be refunded.

Applicants should contact the CBNC office with any questions prior to submitting their applications.

## 2009 CERTIFICATION EXAM APPLICATION INFORMATION AND CHECKLIST

Before completing this form, please read the sections entitled “Applying to Take the Examination” and “Instructions for Completing Application Form” in the Candidate Bulletin. Review the requirements on pages 11 and 20 for the requirements pertaining to your situation.

**Applicants must meet ALL eligibility criteria prior to applying to sit for the Exam.**

Mail this page, with check (✓) marks in all boxes and include the completed application forms, a check, money order or credit card payment, and supporting documentation to CBNC at the address listed. FAXed APPLICATIONS WILL NOT BE ACCEPTED. The application, including all documentation, must be postmarked or overnight shipment dated by one of the three deadlines.

Applications with missing or incorrect support materials WILL be subject to a \$50 Resubmission Fee.

Include with your application:

- This page with check (✓) marks in applicable boxes.
- Completed and signed application forms (do not send CV instead; incomplete forms will be returned).

**Payment** (check type) in U.S. Funds for \$895, \$995 or \$1095. See previous page for application date corresponding with fee. (postmark date used), **payable to the Certification Board of Nuclear Cardiology**. (Checks returned for non-sufficient funds will be subject to a \$35 fee):

Check  Money Order  Credit Card - Type:  MasterCard  VISA  American Express  Discover  \$895  \$995  \$1095

Card Number: \_\_\_\_\_ Expiration Date: \_\_\_\_\_ Billing Address Zip Code: \_\_\_\_\_

Signature: \_\_\_\_\_ Name on Card: \_\_\_\_\_

- Copy of your **current, unconditional and unrestricted** medical license (or certificate in NY) which **must include an expiration date**.
- For U.S. Candidates**, a copy of your **ABMS or osteopathic certificate** if you are board certified in the United States (i.e., Cardiology, Nuclear Medicine, Radiology board certificate); Or if in a fellowship or residency program and certified in Internal Medicine and intend to sit for CD, NM, or R within three years of sitting for the CBNC exam.
- For U.S. Candidates**, evidence of Authorized User status, (e.g., a copy of the facility license listing the Candidate’s name), or of Authorized User eligibility, (e.g., a certificate of completion of a radioisotope handling and radiation safety course with a minimum of 80 hours).
- Additional Requirements for Experience Candidates (reapplying through the Experience Pathway; no new candidates) or Candidates whose training was completed 7 or more years ago at time of application (U.S.)**. Letter documenting **300 nuclear cardiology cases** done within the last 24 months (see Page 17 for guidance on what can be used).
- Documented evidence of **25 hours of Continuing Medical Education (CME) in nuclear cardiology** taken within the last 36 months (see Page 17 for guidance on what can be used).

**All Applicants: Original Preceptor Attestation Letter**. Candidates must include the letter with their application. The letter must be on organizational letterhead and written within the last 36 months. If you have submitted a letter in the past, it may need revision or updating. Contact the CBNC office for guidance. Templates are available on CBNC’s website ([www.cbnc.org](http://www.cbnc.org)).

**Candidates who have not succeeded in passing the examination after three (3) attempts are required to show proof of additional training. A minimum of 4 weeks (160 hours total) of precepted study, documented by receipt of a preceptor letter (refer to [www.cbnc.org](http://www.cbnc.org) for “Additional Training Preceptor Letter Template), 100 nuclear cases read and 25 hours of nuclear cardiology specific courses taken to remedy deficiencies.** The preceptor must be an Authorized User certified by the CBNC, ABNM or ABR or the osteopathic equivalent. The additional training shall begin after the date of the third failed examination attempt. This training will allow a candidate to sit for three consecutive years. Courses for CME taken to meet this requirement must have been taken within the last 18 months. Documentation should be included with the application. Candidates who have failed more than six (6) times must re-take Level 2 training in nuclear cardiology within an ACGME or AOA accredited program. See page 5 for details.

**Incomplete and incorrect applications will require a resubmission fee of \$50.**

# APPLICATION FORM - 2009 CBNC CERTIFICATION EXAM

Office Use

Please note that the application forms constitute just one part of the required documentation. Be sure that you include all documents listed on the "Application Information and Checklist" pages.

Received: \_\_\_\_\_  
Amount: \_\_\_\_\_ Type \_\_\_\_\_  
Reviewer: \_\_\_\_\_

PLEASE TYPE OR PRINT LEGIBLY (This information MUST be provided to determine eligibility)  MD  DO Other \_\_\_\_\_

1. Print **Official** Name Below as listed on the Government Issued Photo ID you will use to identify yourself at the testing site (First, Middle/Middle Initial, Last, Suffix):

2. Print Name below as you wish it to appear on your certificate if you pass the Examination (may be different from Official Name):

3. Preferred Address:  Home  Office (check ONLY one)

Facility Name (list above if applicable)

Street (list above)

Suite/Apt Number

City (list above)

State

Postal Code

Country

4. Office Tel: \_\_\_\_\_

5. Mobile Tel #: \_\_\_\_\_

6. Fax #: \_\_\_\_\_

7. Home #: \_\_\_\_\_

8. Email (used to contact applicant ONLY): \_\_\_\_\_

9. Preferred Contact Method for Questions:  Home Phone  Office Phone  Mobile Phone  Email Address

10. Date of Birth (mm/dd/yyyy): \_\_\_\_\_ 11. Gender:  M  F 12. Social Security # (Optional): \_\_\_\_\_

13. Preceptor Name: \_\_\_\_\_ 14. Preceptor Phone Number: \_\_\_\_\_

15. My medical training included the following (list medical school/fellowship/residency, earliest to most recent)

FACILITY (NAME/LOCATION)	SPECIALTY	DATES ATTENDED	DATE COMPLETED
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

16. I hold a current, unconditional, unrestricted license to practice medicine in the following state(s) or country(ies):

17. Board Certification:

I am board-certified in Cardiology, Nuclear Medicine and/or Radiology by a board which holds membership in either the American Board of Medical Specialties (ABMS), or the Bureau of Osteopathic Specialists of the AOA or hold a non U.S. specialty certificate. (Please list no more than 3 certifications). Testamur candidates certified in internal medicine must list the date of their Internal Medicine certification (see information following page).

1. \_\_\_\_\_ Date Certified: \_\_\_\_\_

2. \_\_\_\_\_ Date Certified: \_\_\_\_\_

3. \_\_\_\_\_ Date Certified: \_\_\_\_\_

I do not reside or practice in the United States; the board certification requirement in my country is as follows:

I have carefully reviewed CBNC's Eligibility Requirements and my supporting documentation. I have enclosed the necessary written verification with precise wording for my background. I understand that documentation which does not meet CBNC's requirements as outlined in this booklet or which does not include the required wording cannot be accepted. If my documentation is incorrect or incomplete I will be charged a resubmission fee of \$50. I am aware that I can contact the CBNC office for guidance on submission of my documentation prior to submitting my application.

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

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## 2009 Certification Application Form Page 2

- I am board-certified in Internal Medicine but plan to sit for the Cardiology, Nuclear Medicine or Radiology board. I understand that in order to receive a CBNC Certificate, I must provide evidence of Cardiology, Nuclear Medicine or Radiology certification within 3 years of taking the CBNC exam. I understand that my nuclear cardiology certification period will be 10 years from the date of the exam. Internal Medicine certification date: \_\_\_\_\_
- I am not board-certified in Internal Medicine but plan to sit for the Cardiology, Nuclear Medicine or Radiology board. I understand that in order to receive a CBNC Certificate, I must provide evidence of Cardiology, Nuclear Medicine or Radiology certification within 3 years of taking the CBNC exam. I understand that my nuclear cardiology certification period will be 10 years from the date of the exam.
- I do not reside or practice in the United States and no board certification is required in my country.

18. My primary professional setting is (check all that apply)

- Private Practice, Group                       Medical School Based Physician                       Private Practice, Solo  
 Hospital Practice Based Physician                       Fellowship/Residency                       Other (Please Specify): \_\_\_\_\_

19. Indicate your **PRIMARY** type of practice (CHECK ONLY ONE):

- Cardiology                       Nuclear Medicine                       Radiology                       Other \_\_\_\_\_

20. CBNC Candidate and Diplomate contact data is treated confidentially; CBNC never sells or rents the names or address of such individuals. However, as a service to Candidates, information on educational programs, such as board review courses, may be available prior to the exam. Check below whether you wish CBNC to provide your address to sponsors of such programs.

*NOTE: CBNC does not sponsor educational activities. Any such courses are planned and offered entirely external of CBNC, CBNC Board members or members of CBNC's Exam Development and/or Review Committees. CBNC neither endorses nor warrants the quality of any educational course or program, nor makes any statement that any course or program will or will not aid individuals in preparation for the CBNC certification or recertification examinations in nuclear cardiology.*

I  wish  do not wish to receive information on educational programs prior to the exam.

21. Candidates with Disabilities: Candidates requiring modifications in the examination administration because of a disability must submit documentation outlining the reason why special accommodations must be provided. **This request MUST be included at the time of application. CBNC must work with Prometric's Special Accommodations Department for any special needs testing.**

### PLEASE READ AND SIGN THE FOLLOWING STATEMENT

I, the undersigned applicant, hereby apply for certification offered by the Certification Board of Nuclear Cardiology (CBNC) in accordance with and subject to its rules and policies. I understand that it is my responsibility to meet CBNC's eligibility requirements and to provide such material as is required to document this.

I understand that the information acquired in the certification process may be used for statistical purposes and for evaluation of the certification program. I further understand that the information in my records will be treated confidentially. To the best of my knowledge, the information contained in the application is true, complete, correct, and is made in good faith. I understand that CBNC reserves the right to verify any or all information on this application and that any incorrect or misleading information may constitute grounds for rejection of my application, revocation of my certification, or other disciplinary action.

I recognize the Board of Directors of the CBNC as the sole and only judge of my qualifications to receive and to retain a certificate issued by the CBNC and to have my name included in any list or directory in which the names of diplomates of specialty examinations are published. I further agree to hold harmless, individually and collectively the officers, directors, staff and appointed examiners of the CBNC for any decision or action in pursuance of their duties in connection with this application, the examination, the score or scores given with respect to any examination or for the failure of said CBNC to issue me a certificate.

I understand and agree that in the consideration of my application my moral, ethical and professional standing may be reviewed and assessed by the CBNC; that the CBNC may make inquiry of such persons as the CBNC deems appropriate with respect to my moral, ethical and professional standing; that if information is received that would adversely affect my application, I will be so advised and given an opportunity to rebut such allegations, but I will not be advised as to the identity of the individuals who have furnished adverse information concerning me; and that all statements and other information furnished to the CBNC in connection with such inquiry shall be confidential, and not subject to examination by me or by anyone acting on my behalf.

I also pledge myself to the highest ethical standards in the practice of Nuclear Cardiology. I fully understand that if I engage in any practice or activity which, in the determination of the CBNC is deemed to be in violation of this pledge, that the CBNC has full authority to withdraw my certification. Furthermore, I understand that if I engage in any form of exam impropriety before or during the exam, my exam will not be scored. I understand also that, should any impropriety on my part occur, I will not be allowed to re-apply until three (3) years have passed and that a new application and Candidate fees will be required.

I understand and agree to the following: that CBNC will produce a demonstration tutorial to explain the electronic exam and questions format; that CBNC STRONGLY encourages that candidates take this tutorial prior to the exam; and that if I elect not to review the tutorial in advance, I do so at my own risk and that no additional time will be granted during the examination.

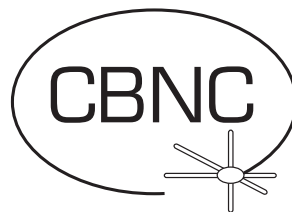
I have read the 2009 Candidate Bulletin and agree to abide by all policies and rules of the Certification Board of Nuclear Cardiology. I understand that I have the right to request and review any CBNC policy prior to signing this document. I attest that I meet all of the Eligibility Requirements for certification as outlined in the 2009 Candidate Bulletin.

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Signature

Date





Certification Board of Nuclear Cardiology  
101 Lakeforest Boulevard, Suite 401 • Gaithersburg, MD 20877  
Tel: +240.631.8151 • Fax: +240.631.8152 • [www.cbnc.org](http://www.cbnc.org)