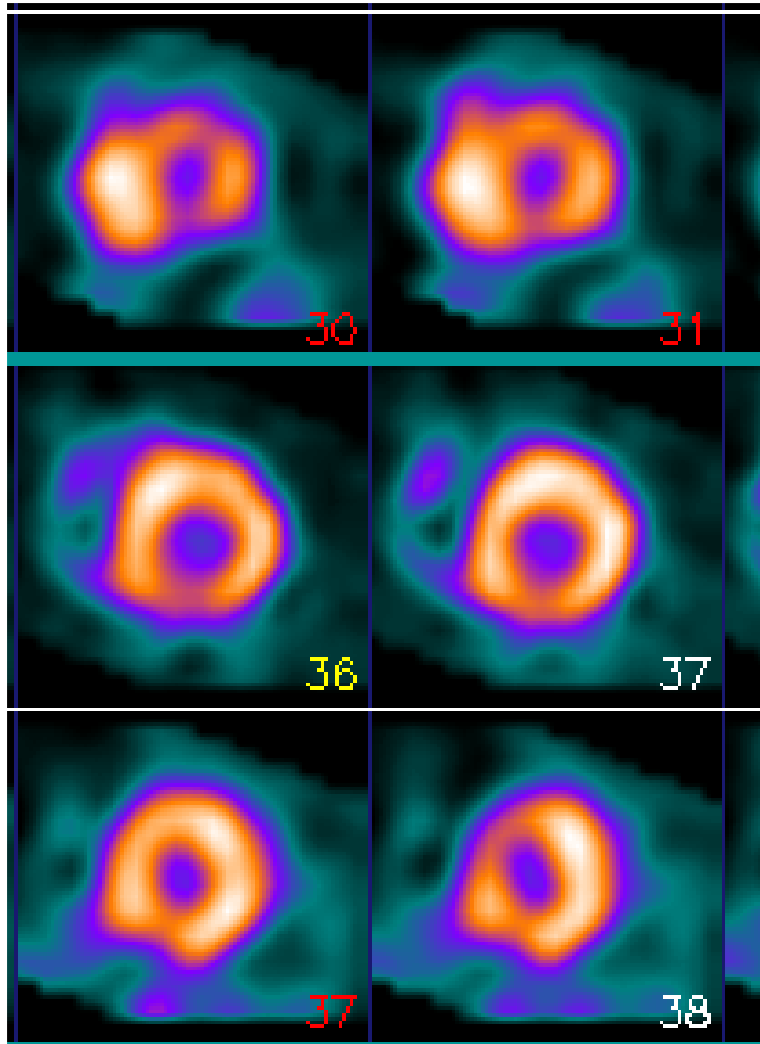


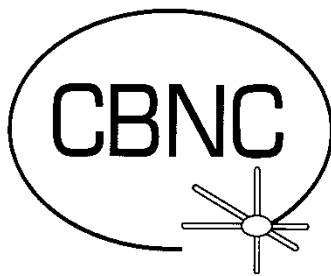
Nuclear Cardiology Job/Task Analysis Summary Report – 2016/2017



Prepared for CBNC/
ACPA by
The Caviart Group

Nuclear Cardiology Job/Task Analysis Report – 2016/2017

Conducted on behalf of the



Certification Board of Nuclear Cardiology
A Member of the APCA Family of Certification
Programs



APCATM

By

Caviart

The Caviart Group, LLC

May 2017

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The Caviart Group

This report reflects the original work of The Caviart Group, LLC and was produced under the supervision of Clarence “Buck” Chaffee, President. This document is copyrighted (2017) by The Caviart Group, LLC and is intended for the sole use of CBNC.

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FOREWORD

The Alliance for Physician Certification & Advancement™ (APCA™) is part of the Inteleos™ family of Councils that also includes ARDMS®. Spun out of ARDMS in 2016 to meet the exclusive needs of physicians, the APCA Council represents 21,000 physicians dedicated to continual learning and providing high-quality and compassionate patient care through certification. APCA joins ARDMS in furthering its long-standing mission of raising the global standards of excellence in healthcare and patient safety.

In January 2016, the APCA Council, led by physician volunteers, assumed oversight of the CBNC™ – Certification Board of Nuclear Cardiology™ certification program.

In August 2016, CBNC began the process of assessing and revising the Certification Board of Nuclear Cardiology™ examination by undertaking the process of conducting a job/task analysis.

CBNC engaged The Caviart Group to conduct this study.

The CBNC JTA study was designed to:

1. Identify those tasks performed by Nuclear Cardiology professionals that are important to the competent practice of the profession and identify the knowledge, skills and abilities (KSAs) that are required to perform those tasks.
2. Provide information for an examination specification indicating the content and weighting for future CBNC examinations.

Definition of a Job/Task Analysis

The term “job/task analysis” refers to a variety of systematic procedures designed to obtain information about the tasks performed on a job and/or the knowledge, skills and abilities and skills necessary to perform those tasks (Arver & Faley, 1988; Gael, 1983). A job/task analysis is the primary mechanism for establishing the job-relatedness of decisions concerning standards for professional certification and for supporting arguments of content validity for examinations constructed from the results of a job/task analysis. The job/task analysis described in this report was designed to be consistent with the AERA/APA/NCME Standards for Educational and Psychological Testing; the ANSI/ISO/IEC International Standard 17024; the NCCA Standards for the Accreditation of Certification and current best practices in testing.

THE JOB/TASK ANALYSIS METHODOLOGY

A diverse panel of experienced Nuclear Cardiology practitioners was formed into a JTA Working Group. This group was charged with the primary responsibility of defining a draft list of the tasks performed by Nuclear Cardiology professionals and the knowledge, skills and abilities believed to be important for competent performance of those tasks.

The JTA Working Group met face-to-face on August 19 and 20, 2016 in Tysons Corner, VA. The meeting was facilitated by Clarence “Buck” Chaffee, President of The Caviart Group. During this meeting, the group discussed and came to consensus on the characteristics of a newly certified CBNC professional.

The description of the characteristics of such individuals created by the JTA Working Group is as follows:

DEFINITION OF A NEWLY CERTIFIED NUCLEAR CARDIOLOGIST

A newly certified nuclear cardiologist is an experienced physician who is trained in nuclear cardiology and has the ability to determine the appropriateness of a nuclear cardiology study and then properly select, safely perform and accurately interpret nuclear cardiology studies. These physicians are able to understand the diagnostic and prognostic implications of the test results and effectively communicate the results to other health professionals.

They understand the strengths and limitations of different stressor protocols and their impact on the interpretation of nuclear cardiac imaging. They are able to effectively integrate the clinical, stress electrocardiographic and imaging findings into a single comprehensive and clinically relevant report.

They oversee the activities of technologists/medical personnel according to institutional protocols. They are able to safely receive, handle and administer radioactive materials and understand basic radiation safety concepts and instrumentation in accordance with US Nuclear Regulatory Commission regulations.

MAJOR TASKS

With consideration for the characteristics described above, the JTA Working Group drafted a list of major tasks and subtasks, organized across four phases of nuclear cardiology that such individuals might undertake.

PILOT SURVEY

The information prepared by the subject matter experts working group was compiled and formed into a draft survey instrument. This draft survey was distributed to the JTA Working Group members and other nuclear cardiology professionals. In addition to responding to the survey items, the Pilot Testers also completed a feedback form with suggestions for clarifications and additional survey questions.

The results for the pilot study were very good. Participants indicated no difficulty understanding the instructions or rating scales. They also offered some changes to improve the survey many of which were incorporated into the final survey document.

SURVEY ADMINISTRATION

CBNC used an internet survey software system to deliver the final survey. Any computer with a web browser and a web connection could be used to access the survey.

On October 25, 2016 the CBNC JTA survey was launched. Individuals were recruited to respond through direct email invitations. A total of 9,617 emails were sent to CBNC certificate holders. 684 emails were returned as undeliverable. We are not able to determine the number of emails that were actually delivered and opened. Two follow-up emails were sent to everyone who had not started the survey as well as those who had started the survey but had not completed the survey. The survey was closed on November 20, 2016.

A total of 895 responses were received during the survey period. Of these responses, 595 were deemed to be sufficiently complete and from individuals whose demographic information represented them as qualified nuclear cardiology professionals. Responses were received from around the world with individuals from 37 countries responding.

Since we are unable to determine how many surveys were actually delivered, we are unable to calculate a response rate for this study. The 595 usable survey responses however exceeds the minimum required for statistically reliable results for the study.

In addition, the distribution of the demographic characteristics of the respondent population is believed to be representative of the breadth of the profession¹.

ANALYSIS OF DEMOGRAPHIC INFORMATION

The following charts graphically depict the demographic information gathered in the job/task analysis survey. The purpose of collecting this data was to describe the population of individuals who responded to the survey and whose data was included in the final analysis. "N" represents the total number of responses for that demographic question. (Note: Respondents were not required to respond to any question if they chose not to.)

The purpose of this analysis is to determine whether the respondent population is demographically representative of the population of certification professionals. Since no data exists identifying the actual demographic distribution of professionals in the field, subject matter experts were asked to review this data. They concluded that this sample was a reasonable representation of the population.

DEMOGRAPHIC DATA

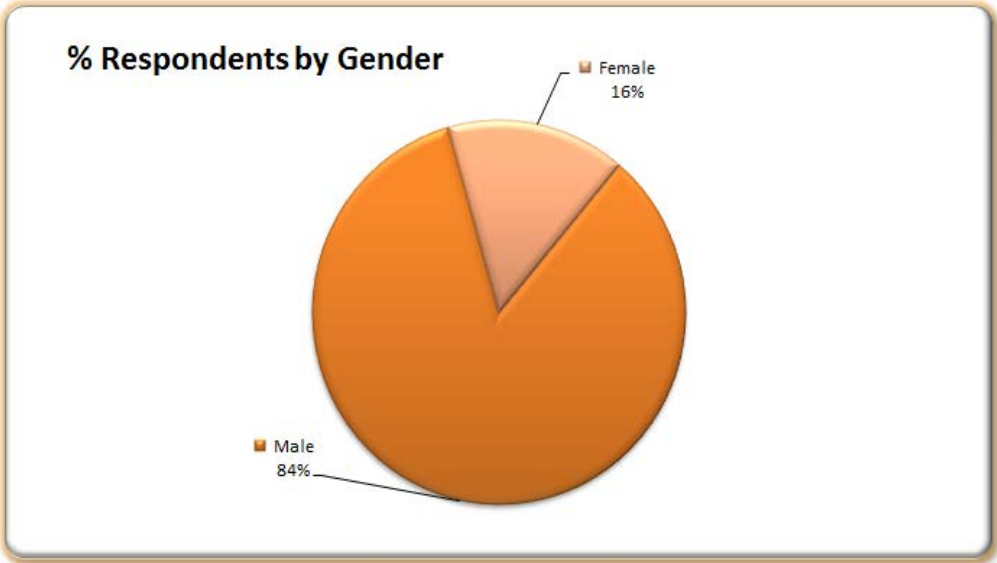


Figure 1 % Respondents by Gender

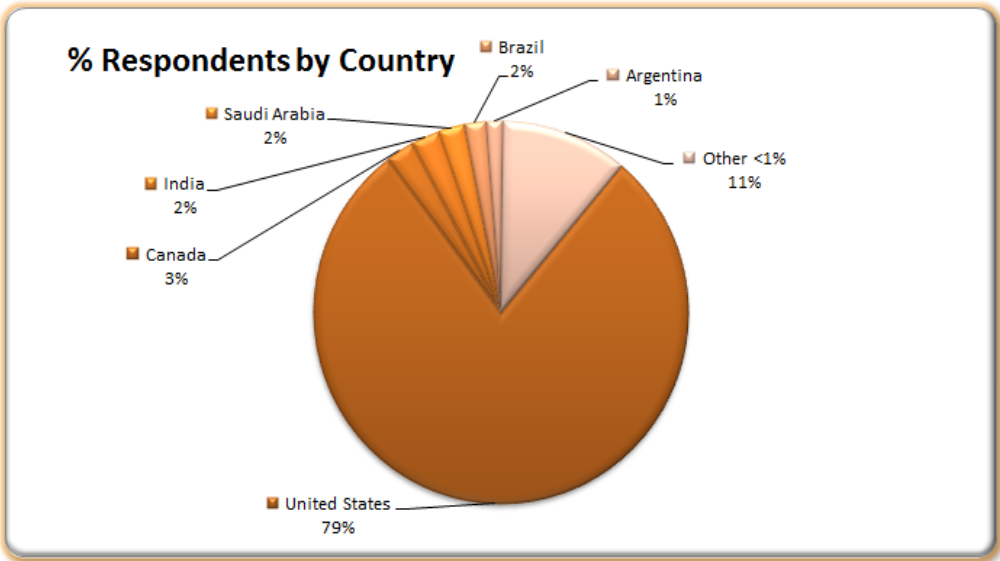


Figure 2 % Respondents by Gender

% Respondents by State

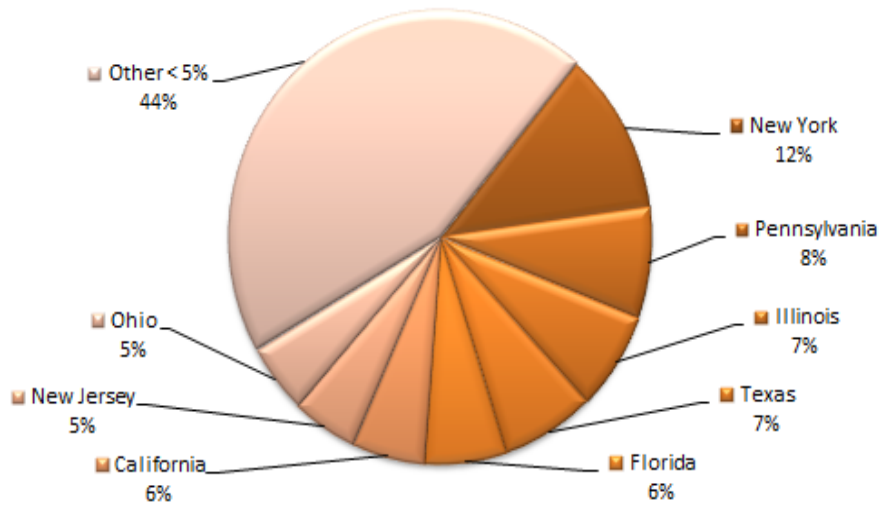


Figure 3 % Respondents by State

% Respondents by Level of Nuclear Cardiology Training

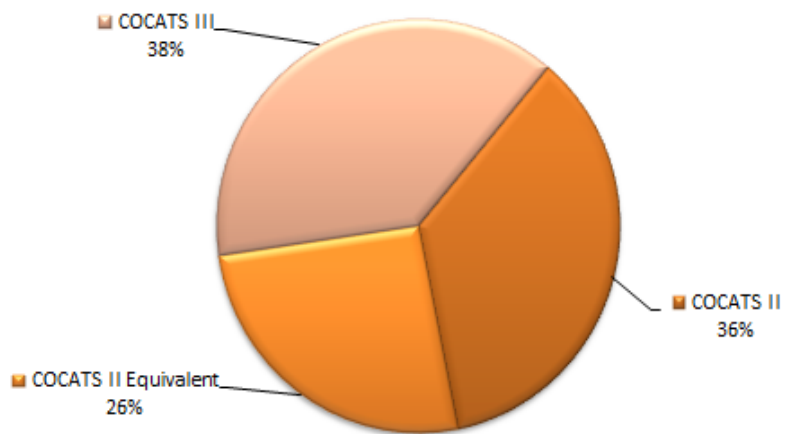


Figure 4 % Respondents by Level of Cardiology Training

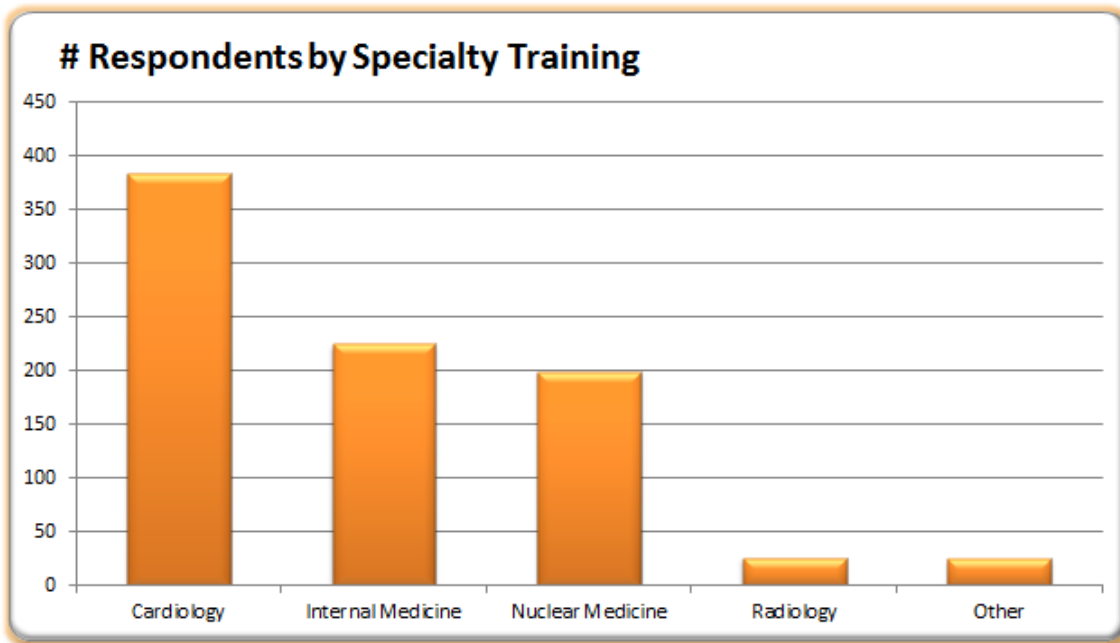


Figure 5 # Respondents by Specialty Training

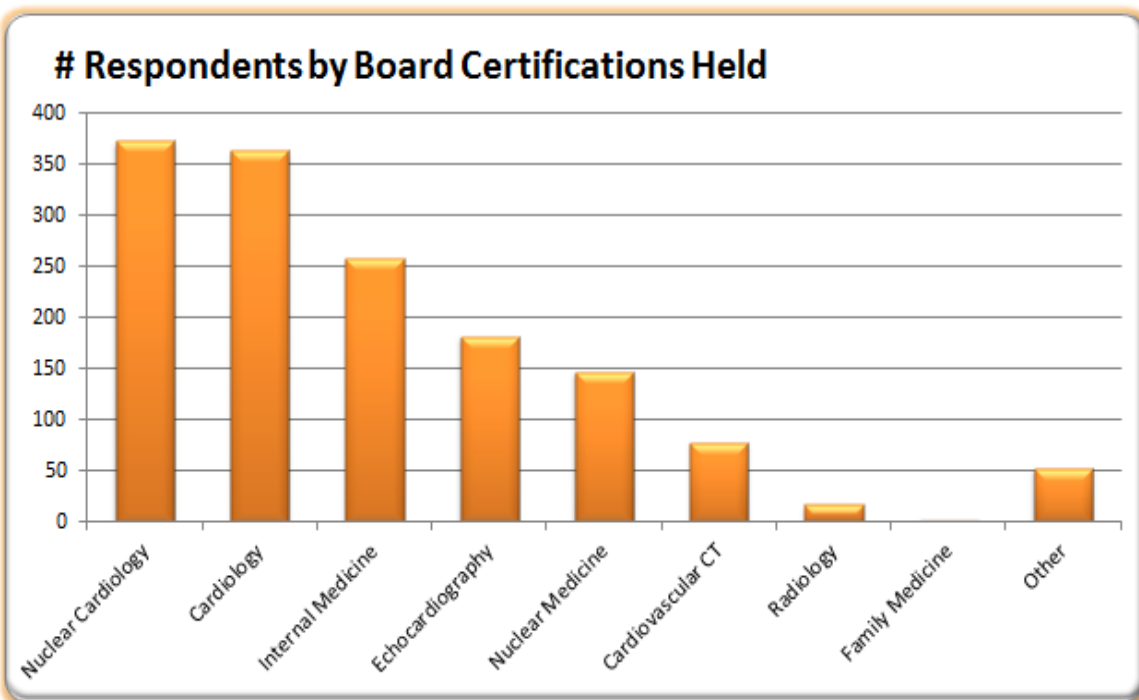


Figure 6 # Respondents by Board Certification

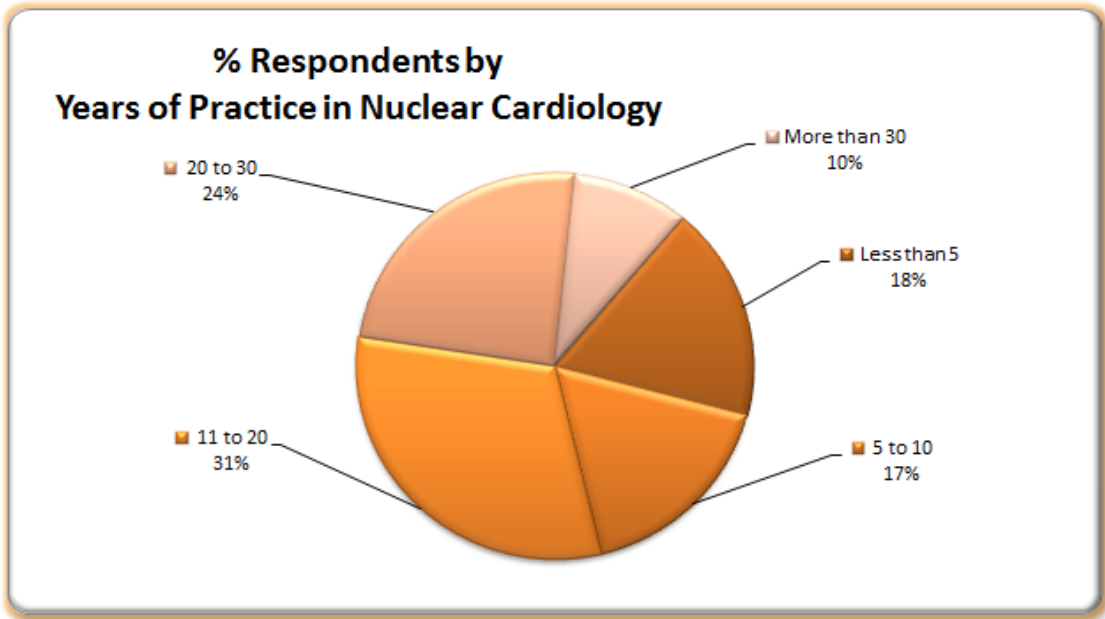


Figure 7 % Respondents by Years of Practice in Cardiology

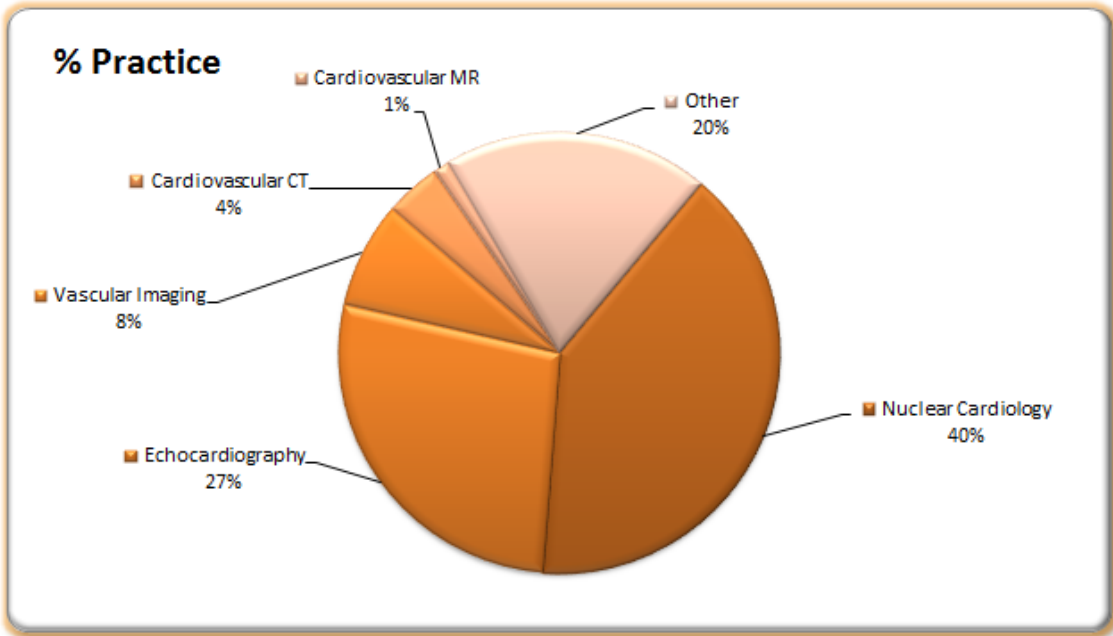


Figure 8 % Respondents by Practice

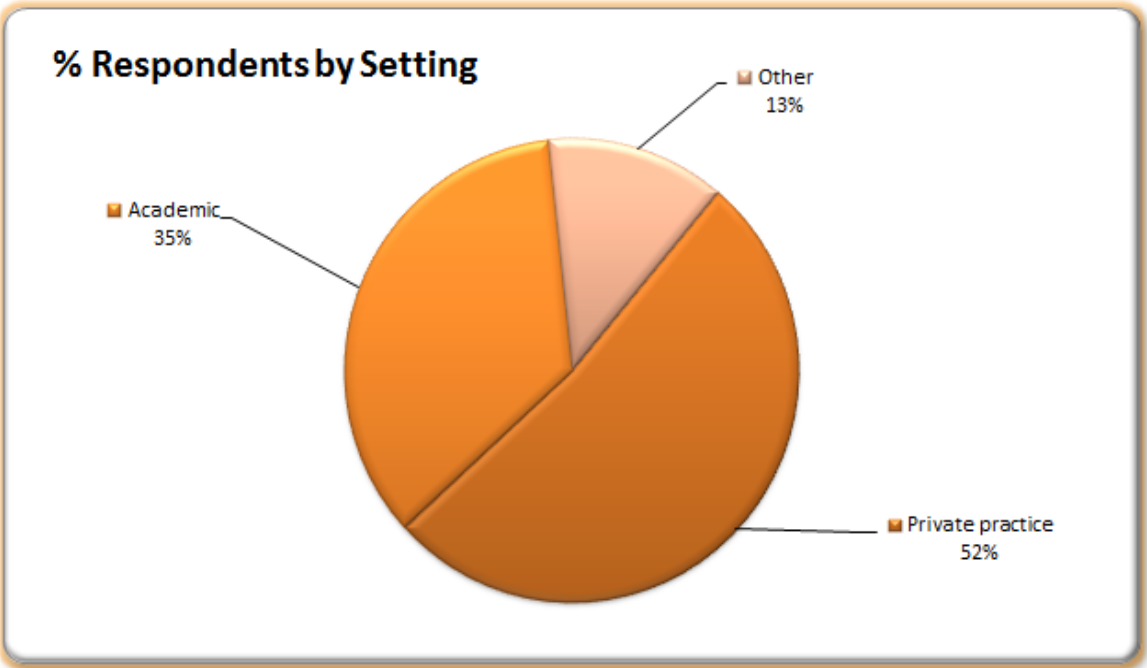


Figure 9 % Respondents by Setting

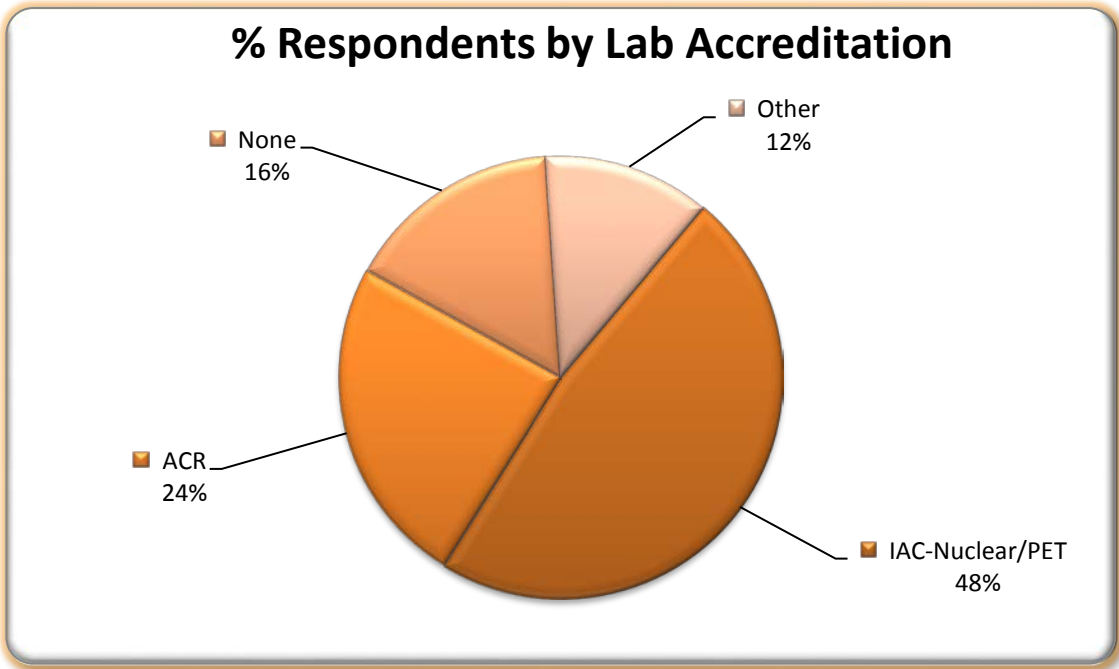


Figure 10 % Respondents by Lab Accreditation

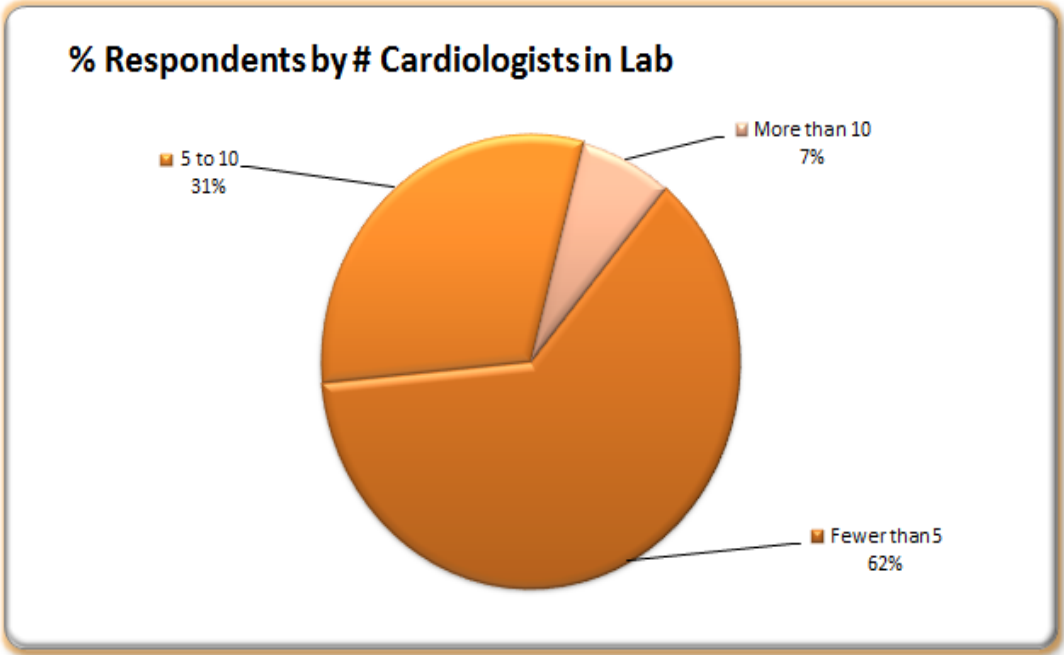


Figure 11 % Respondents by # of Cardiologists in Lab

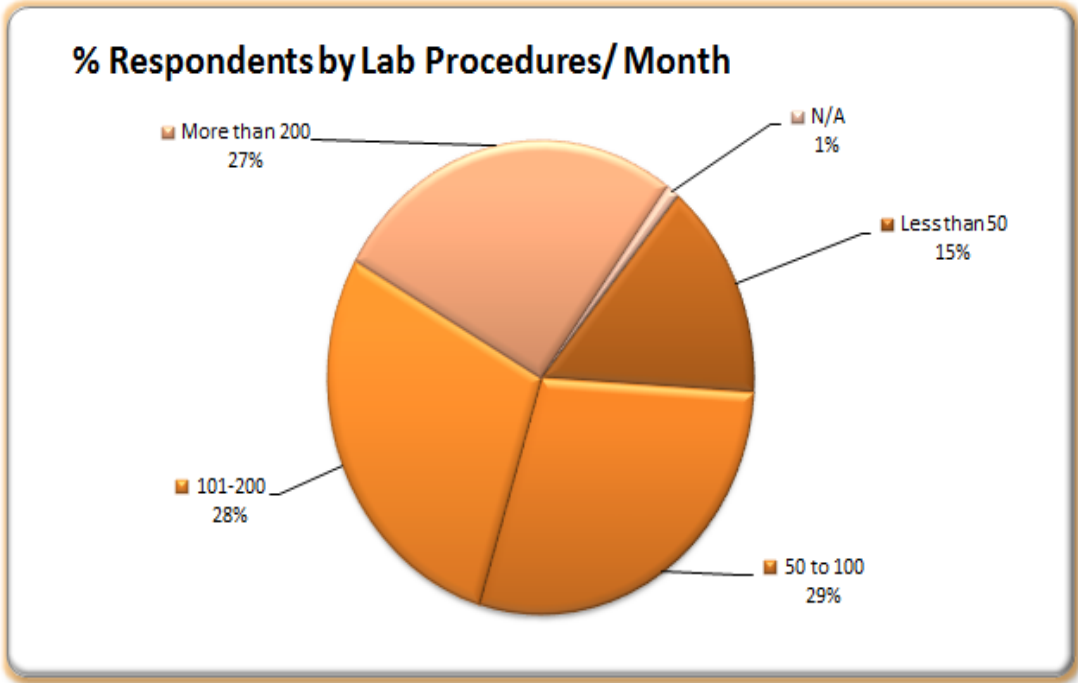


Figure 12 % Respondents by Lab Procedures per Month

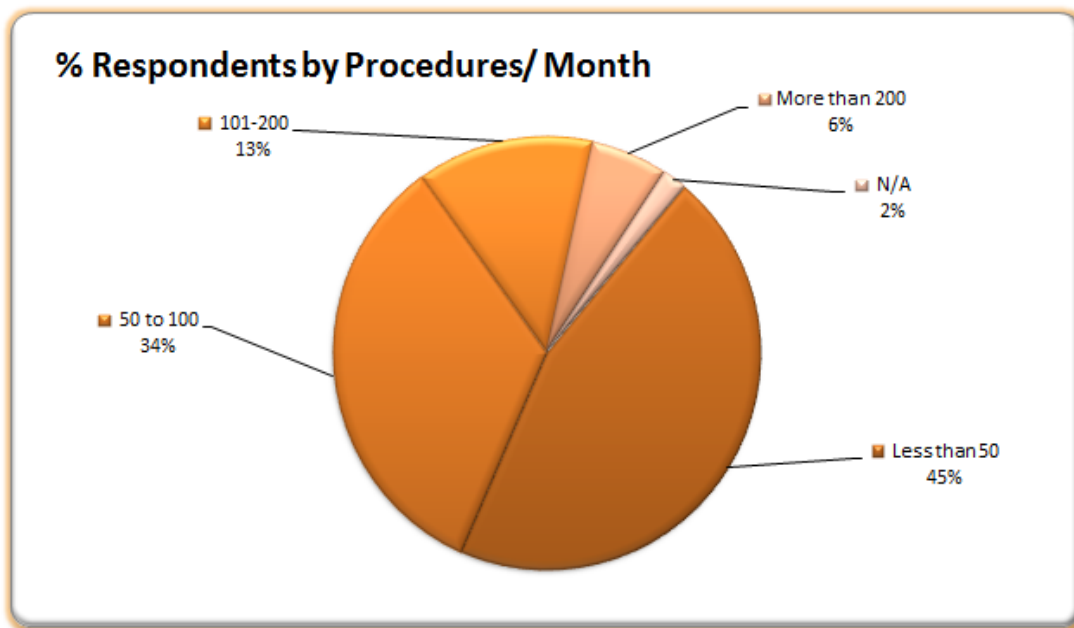


Figure 13 % Respondents by Procedures per Month

Physical Attributes

Respondents were asked about the importance of one physical attribute – sight. The results are shown in Table 14 below.

How important is the ability to see clearly enough, with or without assistive technology devices, to readily read and interpret studies to the competent performance of the job of a Nuclear Cardiologist?	N	%
Not Important	1	0.2%
Somewhat Important	8	1.7%
Important	48	9.9%
Very Important	150	31.0%
Critically Important	278	57.4%
Total	485	100%
<i>Table 14. Physical Attributes</i>		

Data Analysis

The purpose of the data analysis is to determine whether the survey population validates that the tasks identified by the JTA Working Group as being required for the job.

The analysis identifies those tasks that are performed by a majority of the population and are deemed to be important for competent practice.

To assist in the interpretation of the survey results, cut-points were established to differentiate more important activities from less important activities. Activities not meeting one or more of the criteria were flagged for possible omission from the certification examination. The cut-points that were set in this study and their rationales are provided below.

Analysis of Tasks

Percent “Do”

The first analysis is the percentage of respondents who indicated that they expect a newly certified professional to perform the task in their job. The respondents were asked to indicate how frequently they expected a newly certified professional to perform the task. The “Percent Do” scale reflects the percentage of the respondents that indicated that they expect newly certified professionals to perform the task at least occasionally. If less than 51% of the respondents fell into this category, the task was not considered to be a core task for this job and was therefore not included for consideration in the certification program.

No tasks fell below this flag.

Mean Importance Ratings

Mean importance ratings were computed for all task statements. The importance scale ranged from 1 (not important) to 5 (critically important). Statements with mean importance ratings of 3.00 (the point on the scale that is equal to “important”) or less were flagged as potentially failing the importance rating.

Importance ratings play a critical role in the design of certification examinations. Professional and legal guidelines indicate that if content is to be included in an examination, the developer or user must be able to demonstrate that it is important for competent performance (AERA, 1985). The 3.00 cut-point recommended by The Caviart Group is consistent with this requirement of demonstrating job relevance.

Six tasks fell below this flag and were reviewed by the JTA Working Group to determine whether they should be excluded from the examination.

Standard Deviation of Importance Ratings

Finally, the standard deviation of importance responses was calculated. This is a measure of the degree to which the respondents agreed with each other. Low standard deviations indicate a high level of agreement while higher numbers mean that there was less agreement as to how the importance of the statement should be rated. Statements with a standard deviation above 1.50 were flagged for special review by the subject matter experts working group due to the relatively high level of disagreement among the survey respondents.

No tasks fell above this flag.

Conclusions

On May 17, 2018, the JTA Working Group unanimously approved the domain weightings and final content outline via an electronic vote. The detailed content outline is in Appendix A. The Final Report was approved by the APCA Council on July 25, 2018. This content outline will be applied to the 2018 administration of the CBNC examination.